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MENTAL SYMPTOMS ASSOCIATED WITH HEAD INJURY

THE PSYCHIATRIC ASPECT*

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My contribution towards discussion of the problem in question is limited to two of its aspects—namely, incidence and prognosis. No general conclusion on these points could be reached except by working forward—that is, by systematic and unselected consideration of after-history in a large number of cases. The necessary facts could best be collected by one or more general hospitals that are called on to deal with many such accidents. A standard mode of examination, probably including such investigations as a radiograph of the skull and cerebrospinal fluid analysis, would have to be adhered to regardless of the needs of the particular case. It would be necessary that a full history of recent and remote experiences and mental tendencies should be obtained shortly after onset, and that subsequent regular notes should record at the time any changes that occurred. In the absence of such data it is clearly impossible to reach general conclusions as to incidence by working backwards from cases that eventually are seen by the neurologist or psychiatrist, since these are only the cases in which serious sequels have followed, and the psychiatrist sees in proportion more of the serious mental sequels, while the neurologist sees more of the slight. Moreover, in the case of the psychiatrist there is for various reasons a tendency for him to see after accident a higher proportion of those who before it already had some mental symptoms than of those who had been perfectly normal.

Bearing in mind all these sources of error, and realizing that it is at present impossible to estimate total incidence, it yet seems worth while to consider the relation to head injury of the very numerous varieties of mental abnormality that may follow, their respective frequencies and time relations, the connexion of these with one another, and finally the course which different varieties are prone to take. Before going further certain distinctions and definitions are necessary.

1. The relation of a mental abnormality to head injury may be physiogenic or psychogenic. The minimum evidence of physiogenic causation is the presence of retrograde amnesia.

2. Whatever the type of causation, one can consider cases either in broad outline or in detail. (*a*) One can concentrate upon syndromes—that is, upon the effect of the injury on structures subserving functions which are innate and common to us all, and so upon structures which may probably be known fairly soon; or (*b*) one can study the effect upon connexions of a kind that are acquired and peculiar to the patient, and so disturbance of functions, in a way that for a very long time will only be expressible in psychological terms, and these of an individual kind.

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I propose here to deal mainly with effects that are physiogenic and expressible approximately in terms of syndromes.

The psychiatrist is principally concerned with those mental sequels that follow "recovery of consciousness." In my opinion the only practicable criterion of "recovery of consciousness" is awareness of external environment and accessibility. It is true that this often makes it as impossible to ascertain the duration of unconsciousness as whether the skull was fractured. But the obtaining of a statement uniformly from all patients is dearly bought by a convention which makes that statement mean something quite different in various cases. Such is the inevitable result of identifying the duration of unconsciousness with the period which the patient subsequently cannot remember; this period may correspond to one or more of about eight different varieties of amnesia that follow head injury.

For present purposes I wish to classify as psychotic all mental abnormalities after recovery of consciousness into the character of which the patient at the time lacks insight and which if sufficiently prolonged would have justified certification. The term neurotic implies the contrary in respect of each of the two points. I shall deal largely though not exclusively with psychotic sequels.

Returning to the problem of the relations of various forms of mental disorder to head injury and their prognosis, I propose to attack this in two ways: (1) by discussion of published evidence of various authorities; (2) by consideration of hitherto unpublished data which I have collected from a number of sources.

1. Published Evidence

There are no national statistics in England and Wales that indicate the influence of head injury in causing mental disorder. The number of motor casualties has steadily risen until it has reached nearly 6,000 deaths and over 200,000 injured per annum. It may be that in these days of universal third-party insurance the tendency to reckon oneself a casualty has increased; but it would probably be safe to assume that incidence of serious head injury with survival must be rising about as fast as deaths from motor accidents. The statistics of the Board of Control concerning admissions to mental hospitals reveal no trace of this. They show admissions attributed to injury as stationary in absolute number and as forming a declining proportion of the total number. This result is due to the fact that they not only fail to discriminate as to severity of injury but also fail to distinguish between injury to the head and to the rest of the body.

It might have been thought that insurance companies would possess collective statistics about incidence and prognosis of mental disorders after such accidents. The companies, if possible, tend to settle claims within the first year after accident. One would, however, expect *a priori* that a settlement would be related to such collective statistics. They exist in the case of epilepsy but not of mental disorder. This is no doubt due in part to the difficulty of defining mental disorder, but since this disregard applies in respect of persistent psychosis one must ascribe it partly to the prevailing underestimation of this as a sequel.

In the absence of satisfactory civilian statistics one might turn for help to the records of military casualties. It is obvious that fractures of the skull in war are accompanied by laceration of the brain and by infection far more often than those in civil life. But apart from such factual differences, there are discrepancies between military and civil findings which cannot be reconciled. This would seem to depend upon the fact that the conclusions as to military cases have been based on an acquaintance with cases that was not close enough or not long enough, upon failure to define terms, and upon other statistical fallacies which will presently be considered.

Official figures concerning casualties of war, both those derived from British and those from foreign sources, agree in dismissing as insignificant the influence of head injury in causation of either neuroses or psychoses. In my view this tendency is greatly overdone.

It is, of course, a truism that of the total of those who were recognized as suffering from a persistent neurosis or psychosis which became manifest during military service, and who have been pensioned or treated by the Ministry for these disabilities, a vast majority owed their disability to a combination in varying degree of neuropathic predisposition and emotional stress. It is further true that of the total number of cases of neurosis and psychosis of war, those which are in any degree the result of serious head injury form a very small proportion indeed. But it may be not merely a logical error to suppose that this last statement can be inverted ; it may be one apt to result in grave injustice in both military and civil cases. It may be wrong, in a patient with a history of head injury and with a syndrome indistinguishable from one of those that occur functionally, to dismiss as negligible the chance that the main factor of this syndrome is the physical effect of the head injury.

I propose to deal separately with the problems of neuroses and of psychoses of war and briefly with the former, because there are no civilian figures regarding incidence of neuroses, either with or without head injury. There can therefore be no quantitative evidence from civilian sources as to the probable fallacy involved in disregarding minor mental sequels of gunshot wounds of the head.

My personal experience and that of the Maudsley Hospital would indicate that it is extremely difficult to discriminate sharply the minor organic element in many such cases from accompanying neurosis. But our experience would suggest that, so far as such discrimination is possible, even in healthy young adults persistence of organic mental disability which unfits for employment is very common.

It seems incredible that patients the subject of head injury due to war do not suffer in many cases from residual mental symptoms like those of the "traumatic psychasthenia" that persists in imperfectly recovered civil cases. That such cases do not appear among those drawing pensions for war neuroses may be due to the fact that while suffering from the usual syndrome they receive their pension for "G.S.W. head." That they do not figure among those treated at Ministry of Pensions clinics and hospitals is due to the same fact: they do not have to attend. More often than in the case of patients with neuroses of emotional origin they are men of an independent type who try to bear the ill they have and get on with it.

Turning to the problem of post-traumatic psychoses there is more to be said. While special factors may operate to some extent in war cases, on the whole there is a very close similarity in the reasons which have led to the underestimation of the influence of head injury in causing psychoses, whether in peace or in war ; this gives the problem a continuing importance.

The total incidence of insanity in cases of "G.S.W. head" according to British official records is the same as that for the general male population, which varies from 0.34 to 0.35 per cent. I am informed that experts attached to the German and French equivalents of the Ministry of Pensions stated that they had no evidence other than the cases of actual dementia and mental deterioration after damage to the brain to suggest that psychoses followed "G.S.W. head." Their experience showed that psychoses in general and schizophrenia in particular were as frequent among the civilian population as among men wounded in the head. It is notable that the same experts rejected the belief that trauma might have any influence in accelerating the course of neurosyphilis—a belief held by most clinicians whose experience is detailed rather than statistical.

It is like putting science in blinkers to disregard, in considering such statistics, the possible preconceptions of those who collect them and who draw the deductions. I am afraid that as a clinician I am left obstinately convinced that some undue scepticism on the part of officials tired of importunacy must here be allowed for. The figures indicate that, apart from gross damage to brain, head injury of war has no influence whatever in determining psychoses. Surely this is too good to be true. When a clinician has seen the immediacy with which, in civil cases, psychoses evolve from the early syndrome following concussion without gross damage and either clear up or persist, can he accept such conclusions? Usually he will have seen even a few war cases having such immediate relations. But whether he has done so or not, will he be prepared to believe in such a mysterious difference between psychotic sequelae in war and in peace?

On the contrary, the clinician will be set looking for possible sources of statistical fallacy, and I think here he will easily find half a dozen or more.

(i) Statistics are of negligible value unless confined to cases in which "G.S.W. head" is grave enough to have some real effect on the brain. In so far as statistics of serious cases are diluted with others of mere scalp wounds, naturally incidence of physiogenic mental disorders will approximate to normality.

(ii) The ratio expressing incidence of insanity or of schizophrenia in the male population is not one of astronomical constancy. It has a wide range of variation with age, time, and place. This might allow of some extra incidence among men with "G.S.W. head" without such increase being obvious. (The extra incidence among civilians with serious head injury is far beyond the range of normal variation.)

(iii) It is likely that among those liable to "G.S.W. head" (mostly front-line soldiers) the tendency to such psychoses as idiopathic schizophrenia is below average. If so, incidence up to average would indicate not indifference of "G.S.W. head" but, on the contrary, its influence in off-setting natural immunity.

(iv) Many patients who would be in a mental hospital if suffering from identical symptoms of non-traumatic origin are neither certified nor in any institution if the psychosis be due to head injury of either military or civil causation. Both in peace and in war cases compensation is generally available that makes it possible to keep the patients uncertified at home. This is shown by the high proportion of very chronic, helpless, or troublesome patients among those actually sent.

With regard to the special question of whether a post-traumatic schizophrenia exists, and the incidence of this, two points should be noted:

(A) Refusal to recognize existence of this is often due to an outworn conception of schizophrenia as being not a mere syndrome but a "disease" of constant and specific aetiology. Under the influence of this conception we get argument in a circle. The name "schizophrenia" is withheld from traumatic cases to which it would be applied if a history of injury were absent. Naturally we shall find little schizophrenia as a sequel of head injury if to those cases that might be thus named we apply the so-called diagnosis "insanity with gross brain lesion."

(B) Even if as a general principle the occurrence of schizophrenia with causal relation to head injury is recognized it is easy in the individual cases unduly to minimize the responsibility of trauma by overemphasizing trifling indications that may be seen as precursors of schizophrenia but are also common in those who never develop it. A case for dismissing most actual instances as idiopathic rather than traumatic can be bolstered up by use of such evidence.

The whole situation becomes analogous to that of epilepsy once it is grasped that, like epilepsy, schizophrenia is the name of a syndrome and that the idiopathic variety is merely the commonest among many. We see that after head injury schizophrenia may, like epilepsy, appear early, and may then be transient or may persist. It may occur later with an interval of normality. While responsibility of trauma for fits is recognized although these first occur after an interval of years, I should not for the present suggest such recognition in the case of schizophrenia appearing after an interval of more than a few months. Thus the evidence of connexion is much stronger in cases of "traumatic schizophrenia" hereafter cited than is usually required for diagnosis of "traumatic epilepsy."

2. Evidence from Hitherto Unpublished Data

Personally I have always found it difficult to reconcile statements made by pensions officials of various countries concerning absence of causal relation between head injury and mental disorder with one's clinical experience showing the immediacy of sequence. Thus it has seemed worth while, in respect of civilian cases, to try and frame some statistics that are based upon either personal knowledge of the patients or at least upon a detailed study of the clinical records made by psychiatrists in charge of the cases. One difficulty which arises is that the impression which any psychiatrist would get regarding the incidence, nature, and outlook of traumatic mental disorder would vary enormously according to the conditions under which he practised. I have therefore thought it might be useful to collate: (i) All instances, among a series of 5,000 psychiatric cases seen consecutively in private practice, in which serious head injury and definite mental disorder coexisted and in which there appeared to be a clear causal relation between them. (ii) All similar instances from each variety of L.C.C. institution at which may be treated any sequels of head injury that come under a psychiatrist at all.

The collation of the statistics from various types of L.C.C. institution has involved preliminary examination of over 30,000 case records. I have to express thanks to the medical superintendents of twelve institutions for granting access to these records and at the same time to the medical staff and social workers for all the trouble they have taken in searching for relevant cases. It is hoped that others may be able from special standpoints to make a more adequate analysis of the cases so extracted.

CASES SEEN IN PRIVATE PRACTICE

There were 123 cases in which mental disorder was said to be present and was attributed to an alleged head injury among 5,000 consecutive patients seen privately. However, forty-three of these 123 patients were seen for medico-legal purposes and only eighty for purely medical reasons. This situation contributed to the fact that of the 123 the relation was truly causal in ninety-two but not so in thirty-one. Disregarding the latter, the proportion of cases in which mental disorder and head injury were causally related among all those seen privately works out at 18 per 1,000.

The group of thirty-one cases were excluded from the eventual comparison with other groups derived from various municipal institutions (which had been similarly weeded). In all such groups there might be a tendency towards inclusion of too many cases as illustrating correlation of mental disorder with head injury. One needs constantly to check this tendency, which results from several causes. First, the distortion of history to which relatives are prone. The temptation in "idiopathic" cases to find some event that can be held responsible is almost irresistible. Attribution to injury is to most relatives more agreeable than admitting mental disorder to be constitutional and perhaps hereditary. In medico-legal cases, of course, there is an added incentive for distortion—a hope of pension, or of damages for injury sustained during employment or in a road accident.

Among the thirty-one excluded cases were many presenting difficult and interesting problems of aetiology. Some details will illustrate the similar sort of weeding that had to be done in respect also of the groups from L.C.C. institutions.

31 Cases in which Mental Disorder was Said to be Present and was Attributed to Alleged Head Injury, but which were Excluded as not having True Causal Relation

(*a*) Organic disease with mental incapacity existing before accident (whether unchanged or aggravated by it):

Epilepsy, 2; general paralysis, 1; post-encephalitic Parkinsonism, 1; arteriosclerosis, 3; meningovascular neurosyphilis, 1.

(*b*) Mental disorder without well-defined physical disease existing before accident (whether unchanged or aggravated by it):

(i) Injury unconnected: amentia, 1; schizophrenia and paraphrenia, 4.

(ii) Injury suicidal and due to prior psychosis, 3.

(iii) Injury due to alcoholism, 3.

(*c*) Mental disorder developed after injury but independently of it (as shown by long interval):

Idiopathic schizophrenia, 4; idiopathic epilepsy, 1.

(*d*) Malingering, 7.

CASES TREATED AT VARIOUS L.C.C. INSTITUTIONS

1. During the five years 1932 to 1936 inclusive there were 12,000 admissions to the seven London County mental hospitals receiving the certifiably insane from London south of the Thames and thus serving a population of some two millions. Of these 12,000, mental disorder was causally related to head injury in thirty-three—that is, approximately in 3 per 1,000 admissions. This group contained a large proportion of very late cases and those of bad prognosis and often difficult to nurse—for

example, those complicated by epilepsy or arteriosclerosis. If cases were admitted early it was commonly on account of some antisocial propensity such as epileptoid mental paroxysms or persistent demoralization. This bears out the view that the number of those certified as suffering from insanity due to head injury gives no real estimate even of the psychotic results due to this cause.

2. During the same period 4,000 patients were admitted to two of the London observation wards which I visited weekly. Of this total sixteen were suffering from mental disorder clearly attributable to head injury—approximately 4 per 1,000 admissions. The majority fell into two subgroups: to one the same remarks apply as to mental hospital cases. The other subgroup was made up of quite early cases too troublesome to nurse in ordinary wards on account of "cerebral irritation" or similar restless excitement, from which they were suffering when first seen.

3. Among 7,000 consecutive registrations at the psychiatric out-patient clinics of North London which are an offshoot of the out-patient department of the Maudsley Hospital there were forty-six having a definitely causal relation between symptoms and head injury—a proportion of nearly 7 per 1,000. This figure is intermediate between that for the mental hospitals and observation wards on the one hand and private practice on the other. The reason, of course, is obvious.

4. A final group of patients to be considered comprises fifty-one with the same causal relation who were treated as in-patients at the Maudsley Hospital during the years 1923 to 1936 among a total of 7,000 (this group of fifty-one included fifteen derived from my own series of ninety-two). The patients of this group have been specially studied by Dr. Tennent.

Of these Maudsley in-patients thirteen might have been classified as neurotic and thirty-eight as psychotic. The first qualification for admission was either good prognosis or scientific interest, but there is naturally a tendency to treat in the wards patients with relatively severe sequels and to deal as out-patients with those having relatively minor consequences (either psychogenic or physiogenic).

Since the number in this series is too small, and since admission was selective and was based on three independent reasons, no general conclusions can be drawn as to the incidence or the prognosis of traumatic mental disorder as a whole or of particular forms of this. But the series possesses considerable value as a set of examples because it has proved possible to trace all patients of the series and without exception to ascertain their present condition—in many cases years after treatment. The series at least suggests in a preliminary way the future which may be anticipated for a number of syndromes and the influence upon prognosis of a number of complicating factors additional to the head injury.

Detailed study of clinical records of all the cases figuring in Tables I and II reveals occurrence after head injury and, within at most six months, of a large number of psychotic sequels of both the psychogenic and physiogenic types.

TABLE I.—*A Study of Cases of Head Injury with which were associated Mental Syndromes Definitely Attributable to Injury*

	Total Seen Privately, 92. Total In-Patients at Maudsley, 51						Northern Clinics, 44		Observation Wards, 19	Mental Hospitals, 38	Total All Sources
	Private Practice only, 77		Seen Privately, afterwards at Maudsley, 15		Maudsley Hospital, 36						
	Psychoses	Neuroses	Psychoses	Neuroses	Psychoses	Neuroses	Psychoses	Neuroses	Psychoses	Neuroses	
Total of each group	23	54	13	2	24	12	13	31	19	38	229
Instances of:											
(1) Known fracture	4	9	5	1	9	3	—	—	5	8	44
(2) Evidence of compression by haemorrhage		5	1		2				1	3	12
(3) Epilepsy	1	8	1		4		1		2	8	25
(4) Specialized mental syndromes: (*a*) Cortical anaesthesia and cortical paresis: Agnosia, Apraxia, Sensory aphasia, Motor "		8	3	1	3		1		1	3	20
(*b*) Korsakoff's syndrome	3		3						4	1	11
(*c*) Demoralization	6				2				5	6	19
(*d*) Epileptoid mental paroxysm	2		2				3		3	5	15
(5) Generalized syndromes: Schizophrenic and paraphrenic dementia	11		5		9		5		7	12	49

TABLE II.—*Cases of Psychosis Following Head Injury within Six Months*

	Affective Group (21 Cases)		Schizophrenic Paranoid Group (49 Cases)	
	Number With Definite Prior Evidence	Number Without Definite Prior Evidence	Number With Definite Prior Evidence	Number Without Definite Prior Evidence
Cases having onset without interval after injury	13	0	9	24
Cases having onset with interval after injury	1	1	0	12
Cases having recurrent attacks after injury	4	2	2	2

Psychogenic Sequels of Head Injury

It will be convenient here to deal briefly with the occurrence of affective syndromes (including anxiety states) after head injury. Hysteria may be dealt with

at the same time, since to this applies most of what is to be said.

In determining any of these syndromes the physical effect of the injury is of minimal importance—as witness the fact that they often occur in cases with no retrograde amnesia at all. The important factors are: (i) the purely emotional shock experienced at the time of the accident or subsequent distress caused by any impairment of the patient's bodily condition or external circumstances; (ii) the constitution at the time of accident—that is, the resultant of inborn tendencies and the evolution of these which has been determined by age, physiological epochs, and any prior experience (mental or physical).

Minor degrees of affective disturbance (and minor paranoid reactions) may follow head injury in virtue mainly of the first group of factors or, at least, of these coupled with minor constitutional abnormalities. Affective and paranoid developments of psychotic severity after trauma occur almost exclusively in those with evidence of major neuropathic tendency (previous attack, persistent abnormality of some degree, or strong family history). This is indicated by Table II in respect of major affective cases.

Hysteria.—This term is used here in a strictly limited sense—the representation or exaggeration of some incapacity (whether physical or mental) motivated by desire to obtain pleasure or reduce displeasure with incomplete knowledge of the motive or intention for representation or exaggeration. If knowledge is complete then the condition is malingering; if such insight is totally and permanently lacking then we are dealing with a psychotic condition which should hardly be called hysteria. The transition from one to other category may be entirely continuous in different cases or in the same one.

Hysteria as a factor of any degree whatever in post-traumatic mental syndrome is far less frequent than used to be thought, and as the whole mental picture it is still less common. It was present in thirteen out of my series of ninety-two cases, but in four at least of these it was combined with either physiogenic disability or with affective disturbance that was not motivated. Even that gives an unduly high idea of its prevalence owing to the large proportion of medico-legal cases in my series.

It is a gross mistake to look only to financial motives for hysteria even in compensation cases, as shown by one case in a mental hospital where the whole mental syndrome was hysteria following head injury. Even when money is the main motive, those of us most conscious of our own rectitude need not be entirely scornful. The patient with any physiogenic disability often regards the capitalization of it at the highest figure as being a duty to his family and his sole chance of doing anything for them and is usually prompted by his wife.

Mental Syndromes having Physiogenic Relation to Head Injury

Physiogenic syndromes appear to fall into two classes:

(A) Disorder of specialized mental functions, probably associated with damage to particular neuronic patterns and so perhaps with lesions of focal distribution.—This class includes cortical impairments of perception and of voluntary movement; agnosias and apraxias of various types; sensory and motor aphasias. Also in my opinion Korsakoff's syndrome; demoralization; epileptoid mental paroxysms.

(B) More generalized types of mental disturbance, probably associated with diffuse impairment at one of a series of cortical levels.

I should incline to suggest that the universal sequence of stages during recovery in a very severe case is as follows: (1) Coma. (2) Confusional states with: (*a*) stupor; (*b*) active delirium. (3) Schizoid states with: (*a*) schizoid stupor; (*b*) schizoid activities. (4) Psychasthenic states with: (*a*) depersonalization and derealization; (*b*) obsessional thought, feeling, and action.

A. SPECIALIZED PHYSIOGENIC SYNDROMES FOLLOWING HEAD INJURY

As stated these may include (i) cortical impairments of perception and voluntary movements; agnosias and apraxias; sensory and motor aphasias; (ii) Korsakoff's psychosis; demoralization and epileptoid mental paroxysms. I do not intend here to say more about the items of subgroup (i), but something about those of subgroup (ii).

Korsakoff's Syndrome.—This has been regarded by Symonds as one of the universal stages in the process of recovery from any mental impairment by head injury which goes as far as loss of consciousness. I should be loath to agree on theoretical grounds; if at any stage in the universal process of recovery mental disturbance were limited to that extremely specialized incapacity to which this distinctive name can most usefully be restricted, then the fact would seem destructive of an illuminating generalization which Symonds himself has expounded. Clinical fact, of course, and not theoretical preconceptions must decide. But I have not found fact as suggested.

Demoralization of every kind is another occasional sequel which is apt to become apparent after an interval. By demoralization is meant habitual disregard coupled with consciousness of the anti-social character of one's acts in pursuit of pleasure or avoidance of displeasure. There were nineteen cases among all the psychotic cases which I investigated—including six among my own. It is most common by far among children, and among adults I think it was commoner in soldiers, and for the same reasons that produced a wave of criminality as an aftermath of war. It is not confined to those who have been morally below par before the accident. Though usually a psychogenic element is traceable in determination of the condition it cannot be wholly explained thus. It may be an almost isolated anomaly or may be associated with widespread deterioration of various kinds and degrees.

Epileptoid Mental Paroxysms.—What are popularly called "brain storms" usually include violence. They may be associated with persistent demoralization or with a schizophrenic state, or with liability to motor convulsions. But they may also occur in post-traumatic patients who for most of the time are decent citizens. They were relatively common among those who had a head wound in war, and are specially liable to be precipitated by a small amount of drink.

B. GENERALIZED MENTAL DISTURBANCES

Certain principles emphasized by Dr. Symonds concerning these appear in essence to be not only true but to exemplify conceptions of great importance; these conceptions have a much wider significance in psychiatry than their particular application to post-traumatic mental syndromes. The objective facts are as follows.

In respect of these syndromes a constant sequence can be recognized. According to the severity of general disturbance to the brain, impairment proceeds as far as one of a definite series of syndromes of which the most extreme is coma. In the course of recovery these syndromes can be recognized as a series of stages, and recovery necessarily proceeds in regular order from one to another of them.

While that order is constant the total duration of recovery may vary from one hour or less to weeks or months. Not only so, but the duration of halt at particular stages of the sequence is variable. Secondary dissolution may reverse the order of recovery.

Such principles will appeal to any psychiatrist whose general outlook is influenced by the thought of Hughlings Jackson. These principles represent the generalized organic syndromes of traumatic mental disorder as a sequence, the connexion between which is inherent in the normal structure of the central nervous system.

Economy of hypothesis renders such a view preferable to another which seeks cause for separate syndromes in distinct pathological processes. The onus is upon those who hold the second view to demonstrate the alleged specific changes, and it seems very doubtful that this can be done.

On the one hand an early stage in recovery of post-traumatic mental disorder ("cerebral irritation") and on the other hand the final stage (what I like to call traumatic psychasthenia) have by separate observers been ascribed to cerebral oedema. If in either case manometer readings of the cerebrospinal fluid or ventriculograms were decisive, or if the results of hypertonic treatment were conclusive, then we should have to accept these findings regardless of theory; no such proof exists so far as I know.

Traumatic Schizophrenia and Paraphrenia.—As a universal stage in the process of recovery there seems to occur a generalized disturbance which corresponds to the essence of the schizophrenic and paraphrenic syndromes (as these are seen in their most common form—the idiopathic or endogenous). Again something has to be allowed for age, rate of progress, duration, and the addition to the clinical picture in traumatic cases of disabilities due to grosser and even localized damage. My findings seem to show that the occurrence of schizophrenia or paraphrenia as a stabilization of a universally occurring schizoid stage is common, that relapse into such a psychosis in a few months is frequent, and in either case the attack may be transient or the change lasting.

With regard to evidence of prior neuropathic tendency, frequency is much less with schizophrenic and paraphrenic sequels than with affective disorders.

(*a*) In a proportion of the cases there is evidence of prior schizoid or paranoid disposition (previous attack, persistent abnormality of some degree, or strong family history). Even here it is to be noted that the evolution of a psychosis which incapacitates the patients usually occurs after the accident without interval. (*b*) In a somewhat larger proportion the psychosis of the same type develops a few months after the accident in a patient who has no pre-traumatic history indicating such liability; this is comparable to what commonly occurs with traumatic epilepsy. (*c*) In a proportion larger than the two former combined a psychosis of the same type develops with neither interval nor evidence of pre-traumatic tendency.

In the face of such evidence it is unscientific to dismiss such sequels as due merely to coincidence or to the antedating of a tendency that anyhow would have become overt later. There is no reason to regard the causation as psychogenic. In fact, the conclusion cannot be escaped that a considerable number of psychoses of schizophrenic and paraphrenic type occur as direct and physiogenic sequels of head injury.

Traumatic Psychasthenia.—I believe persistence of ultimate incapacity for employment by mental disabilities which are not gross and obvious to be more common than Dr. Symonds does. The physical character of the condition is indicated by the almost constant incidence of headache and dizziness, especially on stooping or moving the head. Allowing for differences attributable to age of onset, to rate of progress, and to duration, the content of this terminal stage corresponds pretty closely to that covered by the inclusive term "psychasthenia" according to its usage by Janet. I feel that this term, which has been allowed to become obsolete, would serve a useful function as a comprehensive category covering negative and positive symptoms due to derangements at the highest mental level. It seems to have the same sort of right to recognition as the accepted term schizophrenia—namely, a right based on specially frequent coexistence of certain symptoms and minor syndromes in different cases, and upon the fact that these same symptoms and minor syndromes are apt to occur successively in a single case.

Prognosis of Mental Disorder Associated with Head Injury

This prognosis depends primarily on how far the association is (*a*) accidental; (*b*) psychogenic; (*c*) physiogenic.

(*a*) No discussion is possible here of cases in which head injury is not one factor of the mental disturbance. It is of course never the single cause: there are no single causes in psychiatry.

(*b*) *Psychogenic Disturbances.*—(i) Major attacks of affective disturbance and major paranoid states run their characteristic course. If purely affective they are not influenced in any specific way by being related to trauma.

(ii) Minor affective reactions, including anxiety states, being less related to constitutional bias and more to the emotional shock of trauma and the damage wrought to the patient's health and circumstances, tend to last as long as this damage and to improve in so far as it can be reduced. The prognosis of hysteria depends on the importance of the constitutional factor and the motivation. When related to compensation it will usually clear unless so protracted that a taste for idle invalidism has become ingrained.

(*c*) *Physiogenic Results.*—(i) The occurrence of fracture of skull or of compression by haemorrhage in early stages has no importance other than any which it may derive from likelihood of being associated with grave damage to the brain. There seems to be no evidence as to total frequency of known presence of fracture in two groups respectively—namely, those in which after consciousness fully returns *some* mental derangement persists and those in whom none does. But it seems that known presence of fracture is proportionally as common among those cases in which mental disorder never exceeds a "neurosis" as among those in which it amounts to "psychosis."

(ii) Certain of the specialized forms of organic mental disturbance clear up in the great majority of cases so far as they themselves are concerned. This applies to cortical anaesthesia and paresis, to agnosia and apraxia, and to sensory and motor aphasia. But they are present in cases where serious damage to the brain has occurred, and there is greater likelihood of persistent traumatic psychasthenia following.

(iii) The same principles apply in the case of Korsakoff's psychosis—namely, almost invariable disappearance of the syndrome itself, but frequent persistence of traumatic psychasthenia in the same patient.

(iv) The occurrence of traumatic epilepsy is of specially bad prognosis: development of progressive dementia is common with this.

(v) The outlook in cases with epileptoid mental paroxysms or with persistent demoralization is almost uniformly bad.

(vi) In many cases with an acute schizoid or paranoid syndrome that develops during the acute phase of the illness this clears up.

(vii) Disappearance of the same syndromes is less frequent if they follow after any interval, however short, of apparent normality.

(viii) Residual symptoms having at least the severity of those termed traumatic psychasthenia are very common. The condition is of good prognosis up to about two years, but any change which persists longer than this is apt to be permanent. In assessing the degree and importance of residual defect standardized tests are of little value. Symptoms that are reported by a reliable and unbiased witness as occurring but which cannot be detected at interview must be accepted. Many of the minor changes of this condition—such as lack of initiative, retardation, loss of memory for engagements, indecision—which need not transpire at interview, may destroy the usefulness of anybody doing responsible work.

(ix) While the syndrome traumatic psychasthenia may remain stationary, it may, on the other hand, be the starting-point of a progressive deterioration into dementia.

(x) Permanent change is more likely (*a*) at the extremes of life; (*b*) when organic disease exists—for example, arteriosclerosis; (*c*) when there is a constitutional psychopathic tendency. It must be recognized, however, that even in young adults, and even in absence of any of the grosser psychotic sequels, traumatic psychasthenia may persist.

MENTAL SYMPTOMS ASSOCIATED WITH HEAD INJURY

THE NEUROLOGICAL ASPECT*

BY

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In considering the mental disturbances which frequently result from injuries to the head we recognize at once two groups or chains of possible causal circumstances. The first consists of material elements and comprises the organic injuries of the brain and the subsequent reactive changes in the cerebral tissues. The second consists of abstract elements and comprises the emotional disturbances connected either immediately with the accident itself or with the patient's adaptation to his normal life afterwards, and if the question of compensation arises it adds to this group further elements of anxiety and possibly greed. Both the material and the abstract factors react by their different means on a mental constitution and a mental content which are in large measure peculiar for each individual. The thread of the material effects and the patient's mental constitution are the warp and the woof of the weave of mental symptoms, and the emotional effects are printed on; but we who find it difficult enough to make out the pattern may often be in doubt as to what is imprint and what is woven in the texture.

The range of our subject includes cases of many different kinds, and I have grouped them below chiefly according to their physical nature, but I shall have time only for brief discussion of two or three of these groups.

Classification in Groups

The subject as I see it contains the following groups. In many cases the initial mental symptom is unconsciousness, using the word in its popular sense—that is to say, the abolition of all signs of mental activity.

1. Cases of "simple concussion" in which the unconsciousness is usually of brief duration and there is no indication that the brain has been organically injured.—I have never seen any "mental" symptoms persisting in such cases, with the exception of one quite atypical instance which will be referred to in group 7.

2. More severe cases in which unconsciousness is usually more prolonged and there is conclusive or strong presumptive evidence of organic injury of the brain.—In such cases recovery is occasionally characterized by profound mental disorder lasting many weeks or months, and it is with such instances that we are most concerned to-day.

2a. Rare cases of this kind in which, recovery having reached a certain stage, relapse occurs and the patient sinks into a state of dementia—cases of "late dementia."—I have seen three such cases, and the descriptions of them are fairly common in the literature.

3. Cases in which there has been actual loss or known gross local damage of cerebral tissue which may in itself be responsible for mental changes.—I have in mind cases with open wounds through which cerebral tissue has been extruded, cases of gun-shot wounds and perforating injuries, and cases of depressed fracture in which the damage is local.

4. Cases of intracranial haemorrhage, particularly (*a*) traumatic subarachnoid haemorrhage, and (*b*) subdural haematoma.—Here the physical factors appear relatively simple, while on the psychological side the cases differ obviously from those of the earlier groups in that the sequence of mental changes is from normality down to coma instead of from coma upwards.

5. Cases in which fits occur and are accompanied by intellectual deterioration.—The fits are likely to begin long after the injury, and the factors responsible for the mental symptoms are evidently different from those operating in the preceding groups.

6. Cases of so-called "traumatic neurasthenia."—The physical evidences of injury, if there were any, have disappeared (or have been allowed for), but mental symptoms of a nature that we know well have become apparent. This is a difficult and complex group, which we must try to unravel.

7. Cases in which the mental symptoms, persisting after the accident, are those of one of the well-known types of psychosis and probably depend essentially on the patients' antecedent mental constitution.—Cases of manic-depressive psychosis, schizophrenia, and paranoia have all been described following head injuries. I have myself had one case in which a dementia with schizophrenic features followed, in a boy of 16, an injury which caused unconsciousness for about half an hour and no outward signs of organic damage to the brain. It is difficult to know for how much the physical factors count in such instances.

Stages towards Intellectual Recovery

In group 2 the physical concomitants usually leave little doubt that the brain has been organically damaged. There are probably signs of fracture of the skull and possibly cranial nerve disturbances, reflex changes, signs of local weakness of limbs, or blood in the cerebrospinal fluid. The initial stupor may last a number of hours or several days, and the return of mental activities is gradual. In the vast majority of cases the patient passes as "normal" mentally within a few days, and if I describe cases in which recovery takes weeks or months it is because of their great intrinsic interest and because of the light they throw on other cases. The course of events is somewhat as follows.

THE IRRITABLE AND NOISY PHASE

The patient ceases to be entirely passive when moved or touched, and makes grimaces or movements—and soon utters words—expressive of resentment. Within a very short time he may become abusive when attended to or even when spoken to. This phase varies in duration from a few hours to many weeks. It is sometimes accompanied by periods of restlessness and noisiness, and I have had

*Read in opening a discussion in the Section of Neurology and Psychological Medicine at the Annual Meeting of the British Medical Association, Belfast, 1937.

several cases in which the patients for weeks were almost continuously noisy and unruly throughout their waking periods. As the patient's abusiveness subsides and it becomes possible to carry on a conversation with him, two features become apparent—confusion and perseveration of words. Thus:

How old are you? Eh?—How old are you? How old am I?—Yes. I don't know.—What is your work? I sell things.—What do you sell? Oh, everything.—What kind of things do you sell? Oh, everything.—Do you sell motor cars or vegetables, or what? Everything.—Do you sell motor cars? No, everything.—Do you sell oranges? Yes, everything.—Have you a shop? No, everything.

A patient who has been noisy for any length of time is likely as he becomes more controlled to remain talkative for a considerable further period. His talk circles round a very limited number of ideas and is characterized by frequent repetition, thus revealing both the perseveration of his ideas and the deficiency of his memory. At the same time elation is likely to make itself apparent as a feature of his mentality, so that he becomes generally pleased with himself and his surroundings, and is what is commonly called "fatuous."

DISORIENTATION AND CONFABULATION

There may follow a more subdued state in which the patient answers rationally but is disorientated in time and place. This again may last many weeks.

One of my patients, a consulting engineer, spent a considerable part of his recovery period (in imagination) in India inspecting a line and locomotives with which he had been concerned several years before, and when questioned he was ready to confabulate about his daily visits to India. Another, confined for months to hospital, used to describe visits to his own home and the very questionable goings-on of his grown-up sons and daughters. These two patients thus showed all the elements of Korsakoff's psychosis. One of them had a good deal of subarachnoid haemorrhage, and I think that, apart from this, confabulation is uncommon; in my experience it does not occur during the more rapid recoveries.

THE RETURN OF MEMORY

During this time memory begins to return. The answer to the question "Have you ever seen me before?" instead of being "No" or "I don't know" becomes "Yes, I think so," and finally "Yes" with confidence, and eventually he can tell exactly when and describe what conversation took place. Memory at first—like developing memory—is patchy. The patient has "clear" or "lucid" periods, and he remembers what takes place during those periods. It may be possible to recognize the periods that he will remember by such signs as an increase in his alertness, more thoughtful answers, and a more respectful attitude towards the doctor; but I must say that I have sometimes been disappointed later to find that the patient remembered nothing of a period in which it seemed to me that all these signs were present. Such periods may at first be of only a minute's duration, and then the patient again answers confusedly, but gradually they become longer.

Memory returns as part of the general recovery, but the patient remains amnesic with regard to a period of variable duration preceding the accident.

THE RETURN OF ACTIVITY

When the talkative phase has subsided, or if it has never been present, the patient's general mental activity, as evidenced by his behaviour, is in most cases low. He lies idly in bed or sits about, seldom speaks spontaneously, or if he does he is muttering something to himself about years long past; he takes little interest in what is going on around him, and shows no desire to read or to engage in other forms of mental or physical activity. At first he carries out single actions in response to an immediate external stimulus. As he improves the effect of an external stimulus is more prolonged, it produces more and more "affective drive," it carries him further. Part of this improvement may be due to conditioned reactions, but it is apparent where conditioning can hardly be a factor, and the patient performs new activities with less and less urging. At a later stage he takes in stupidly something of the content of the picture on the front page of a newspaper that is placed on his bed. As the days pass he looks at the pictures with more understanding, but it may be a long time before he reads the headings of the paper with intelligence.

When memory returns and he becomes normally orientated, he begins again to talk spontaneously. Simultaneously, spontaneous physical activity has been developing. It may, however, be years before the patient regains the degree of spontaneous mental and physical activity that he had before his accident, or he may never regain them. We shall return to this point in considering "traumatic neurasthenia."

The Emotional State

The patient's emotional state throughout this period of intellectual recovery may go through different phases. At first he is irritable, resentful, abusive. At a subsequent stage he is often elated and childishly happy. This has already been mentioned, and I shall refer here only to some of the possible consequences of it. The patient is so pleased with himself and so anxious to be nice to everyone that he would be easily wheedled into making a bad settlement of whatever claim he might have for damages. One of my patients told me how a "terribly nice gentleman" had visited him at his home in Sussex and explained to him that the accident (in which he had been knocked down by a lorry) was entirely his own fault, and that he would have no claim for damages at all. I do not suggest that any advantage was taken in this instance of the patient's pleasure and simplicity, but the danger is obvious. Elation, when it occurs, usually persists in some degree throughout the whole of the patient's illness. It has a mitigating effect on some other symptoms, and it seems to prevent the occurrence of an anxiety state such as is common in the later stages of recovery. Elation is usually accompanied by a lack of reserve and by some deficiency in the patient's normal respectful behaviour towards the doctor and other strangers with whom he comes into contact. If the patient's emotional setting is not that of elation the alternative is depression, querulousness, anxiety, and outbursts of temper.

Physiological Nature of the Symptoms

It is evident that the lack of spontaneous speech, lack of intellectual and physical activity, amnesia, failure to retain impressions or to appreciate their full significance, represent abolition or severe impairment of function. On the other hand, the early irritability and abusiveness and the later elation and talkativeness are in all probability due to release of function—release of functions represented at a cortical level by the abrogation of the higher cortical functions of reserve and thoughtfulness, or what the Romans called "gravitas." The disorientation in place

and time may also represent some release of function—some uncovering of almost disused functions—again at a cortical level. The circling of the patient's thoughts around a small number of ideas is probably largely due to the failure to receive new impressions at their proper value, or, while the patient is disorientated in time, it may be due to the liberation of a few memories of the period in which he fancies he is living. In either case it would seem to be due to the partial release of certain functions and the failure of others.

Most of these symptoms are probably the result of diffuse rather than local cortical disturbances, but a major importance for the intellectual defects attaches, in my opinion, to impairment of the function of the cortex of the frontal lobes. Elation is also, I believe, the result of a frontal lobe disturbance. I have seen it with localized injuries of the frontal lobe, and in its extreme form it merges with "Witzelsucht," or pathological tendency to joking, which also occurs with frontal lobe lesions.

Prognosis

You will have gathered from the trend of my remarks that even when mental symptoms are prolonged their course is towards recovery, and in the majority of cases recovery is eventually complete. It is seldom more than six months before the patient behaves as a normal individual, though he may still have some residual symptoms. But you will have noticed, too, that I made a special subgroup of certain cases in which after partial recovery the patients lapsed into a state of dementia which persisted. I cannot stay to discuss this group further, but it is noteworthy that the youngest of my three patients was 55 years of age.

Meningeal Haemorrhage

In all the cases we have been discussing the symptoms have begun with stupor and gradually or quickly receded. I must make some mention of two small groups of cases in which it is possible to watch the progress of the symptoms in the opposite direction, from normality down to stupor. I refer to the cases of subarachnoid and subdural haemorrhage resulting from injury. In the former subgroup stupor may take from a few minutes to an hour or two to develop, according to the severity and perhaps the site of the haemorrhage. The symptoms are excitability, restlessness, irritability, unreasonableness, lack of reserve, an activity which is rational but not fully comprehended and which is accompanied by a hypomanic emotional state, disorientation, confusion, then diminishing activity, paraphasia, drowsiness, stupor. More frequently than not the early symptoms are marked by concussion.

In this connexion I would like to tell the story of one of my patients who had a moderate amount of blood in his cerebrospinal fluid. He was knocked unconscious by a blow on the face, and his amnesia begins about five minutes before the blow. At the time the blow was struck he and another man had agreed to have a fight and were on their way to a suitable place; it may be that his emotional state then had an effect on his subsequent behaviour. He was taken "unconscious" (in the popular sense) to hospital. He remained without signs of mental activity while a cut lip was stitched, and then rather quickly he appeared to "come round." He at once became extremely excited, violent, and threatening, and was arrested as drunk by a policeman who had come with him in the ambulance. He has no recollection of any of this, and was undoubtedly unconscious throughout. He remained in the police cell for eight to nine hours, and late in the evening was bailed out comatose by his brother. The next morning, still stuporous and irritable and, when roused, abusive, he was produced in court and, still quite unconscious, was actually induced to stand up while he was lectured by the magistrate and "bound over." He subsequently passed through a period of very noisy and unruly behaviour, followed by confusion, disorientation, perseveration, and so on, and it was nearly four weeks before he again became conscious.

With the subdural haematomas the progress towards stupor is much more gradual and there is not the same element of irritability—not the same positive elements in the mental disturbance. The decline can be watched over weeks or months, and the steps are those of a simple dementia: reduction of mental and physical activity, reduction of interests, periods of disorientation, perseveration of ideas, amnesia, confusion, drowsiness—all perhaps variable but increasing with each aggravation—and finally stupor.

Although the course is downwards instead of upwards the actual symptoms in these two subgroups are similar to those of phases in the preceding cases.

Our Ignorance of Essential Pathology

We are almost completely ignorant of the physical and functional changes in the brain which are essentially responsible for these mental symptoms following injuries, and I have not found in the literature any detailed pathological reports of cases of traumatic psychosis. In the great majority of cases the lesions in the brain are widespread, and in the cases of intracranial haemorrhage an extensive area of cortex is affected either by pressure or by direct contact with effused blood, and it is rational to correlate the temporary dementia with depression of activity over such a considerable fraction of the cerebral cortex.

Whatever the disturbance is which affects the brain after injury it is one that in certain cases takes months to recover. Oedema, haemorrhage, local circulatory disturbances, the effect of degenerating tissue elements on the cortical cells, damage to association tracts with subsequent "compensation" for the deficiency, changes in the myelin sheaths, and reactive changes of the interstitial elements in the brain may all exert their influences, and in the presence of so many possible factors it is useless to theorize. The elements of Korsakoff's psychosis which appear are probably due to the toxic effects of degenerating blood and other tissue.

"Traumatic Neurasthenia"

It will perhaps have occurred to you that some of the cases that are dubbed "traumatic neurasthenia" are characterized by symptoms of the very same nature as occur in the final stages of recovery in the cases I have been discussing. Such are slight confusion, inability to think clearly, inability to sustain mental activity, lack of spontaneous conversation and spontaneous physical activity, and lack of reading in a person who has been accustomed to read. These are fairly good indications of a minor degree of that receding dementia which is a feature of the more obvious and prolonged mental disturbances, and such symptoms undoubtedly have a basis in organic cerebral injury. I always distrust the label "traumatic neurasthenia" if the patient's injury has been a serious one. With this psychasthenia the emotional state is variable, but more often leans towards depression. There may be superimposed factors of anxiety arising from the

patient's environmental conditions—including lack of income and the matter of compensation. But in some cases there is another factor which I believe is of greater importance, and that is the difficulty which the patient has, because of his persisting intellectual disturbance, in adapting himself to his normal life, and particularly to his occupation. An example will make clear what I mean.

A butcher, aged 50, had had a serious accident seven months before I first saw him. He said he was unable to attend to his business because whenever he went into his shop he felt "awful," and after a few minutes had a feeling that he simply must get away from it. He complained also of headaches, depression, inability to concentrate, being easily tired, lack of interest, disinclination to meet people; he found it a great effort to write a letter or to make a simple calculation, and his memory was very bad. He had formerly been an active man with a good many interests and many friends, but since the accident had been content to sit about idly, and seemed to have lost all his old interests. One of the reasons why he did not want to meet his former friends was that he had nothing to say to them. There was thus ample evidence of intellectual impairment persisting from the time of the accident. Consider the situation of this man when he goes into his shop. His activities there are very largely habits and reactions conditioned over half a lifetime. But they require memory, judgement, power of rapid calculation, grasp of details—qualities which he no longer possesses in adequate degree. All his strongly ingrained habits and conditioned reactions are frustrated by his persisting mental impairment. Is it any wonder that he feels awful and wants to run away after a few minutes? In the case of an employee the conflict is still greater because of the added feeling of compulsion to do the work.

It is not surprising, then, if true neurasthenic elements are often superimposed on the picture of persisting psychasthenia. In assessing such cases, whether with the neurasthenic element or not, it is important to obtain evidence which will reveal the degree of persisting impairment of the patient's mental activity. Fortunately the prognosis is in general good.

Other Types

The next largest subgroup is formed of those patients in whom a constitutional tendency towards neurosis of the anxiety type pre-exists and the accident serves to precipitate a period of aggravation. They are usually to be distinguished from the last group by their volubility and the multiplicity of their symptoms. Their "headaches" are the typical feeling of pressure on the top of the head or of a tight band round the head, and they are not brought on by stooping and by physical effort as are those of patients who are suffering from organic after-effects of head injuries. Usually the accident has been of a less severe type than in the cases I discussed earlier, and a history of antecedent symptoms of neurosis may be obtained.

Gross hysterical manifestations following injury are, I think, usually the result of pre-existing tendencies, and occur in persons of poor mentality. Minor degrees of hysteria are possibly common, in the sense that a patient may unconsciously take refuge in a continuance of subjective symptoms rather than make the effort to return to the conditions of his normal life or relinquish a claim to compensation.

Then there are those who make the most of their symptoms in an effort to obtain the maximum amount of compensation. We scoff at these, but we must be careful to recognize that the difficulty of obtaining fair compensation gives rise, especially among the working classes, to a great deal of genuine anxiety.

Finally there are cases in which the injury seems to precipitate an attack of depression in a patient whose pre-existing mental constitution was of the cyclothymic or manic-depressive type.

In referring to these latter groups I have stepped on to the verge of a big subject, with which I hope some other speaker will deal—namely, the influence of the patient's individual mental constitution on the symptoms arising in consequence of a head injury.

TREATMENT OF VIRUS DISEASES OF THE SKIN*

BY

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It is a disappointing fact that our knowledge of viruses and the lesions they produce has not added greatly to our therapeutic efficiency in the management of virus diseases of the skin, especially as the most striking examples of lasting immunity occur in certain virus diseases, and few bacterial diseases exist which will bear comparison in this respect with diseases such as measles, mumps, varicella, variola, and zoster. The latter impressive examples are apt to obscure the fact that, in general, no essential differences distinguish the immunity following virus from that of bacterial diseases and it appears to be most probable that viruses are living agents having many points of close resemblance to the pathogenic bacteria. Similar antibodies are developed in virus diseases, and the presence of these antibodies has been demonstrated by the well-known bacteriological tests of complement fixation, agglutination, precipitation, and neutralization. Specific therapy therefore follows the lines of bacteriological procedure, and would chiefly depend upon the use of vaccines and sera.

Unfortunately experimental and clinical evidence indicates that in many virus infections specific antibodies are practically ineffective when the virus has once reached a susceptible cell. No doubt there are exceptions to this rule, and in 1935 Laidlaw, Smith, Andrewes, and Dunkin demonstrated that an anti-influenza serum had considerable potency therapeutically, even when given to mice two or three days after experimental infection with influenza virus. As a rule, however, unless specific antibodies reach the cell before the invading virus, infection is very likely to ensue, and the use of hyperimmune serum or that of convalescent patients is almost limited to prophylaxis. Similarly the induction of active immunity by living or dead vaccine may be very effective in the prevention of infection but of little or no value when infection has occurred.

The various means of producing active immunity in virus diseases are:

1. Vaccination with living virus:
   - (*a*) Human strain—for example, herpes.
   - (*b*) Modified by animal passage (vaccinia).
   - (*c*) Attenuated by time or temperature (rabies).
   - (*d*) Neutralized with immune serum (distemper).

* Read in the Section of Dermatology at the Annual Meeting of the British Medical Association, Belfast, 1937.

2. Vaccination with killed virus:

Heat, formalin, or phenol, and a further modification of virus absorbed on inert protein or other material.

Herpes and Zoster

Let us consider what has been tried and what accomplished in the treatment of skin diseases due to viruses: first, in the case of herpes. Andrewes and Carmichael (1930) demonstrated the presence of antibodies in all of seven cases of frequently recurring herpes, and they made the observation that in some obscure way herpes can occur in man despite the presence of antibodies in the serum. This finding was confirmed by a different test (Brain, 1932); specific herpetic antibody was found in thirty out of thirty-two individuals who were subject to herpes, and in two cases of recurrent herpes repeated tests showed the constant presence of antibody. It was thought that a transient local lesion like herpes could scarcely account for the persistence of antibodies in the serum, and it seemed probable that these patients were carriers of the virus, for there is some evidence that such carriers exist.

Apparently when the antibody content of the serum is below a certain level active herpetic lesions can occur. In some cases it would seem that a second infection, such as pneumonia or the common cold, renders the patient susceptible to the herpes virus already present. It is reasonable to suppose, therefore, that if the antibody content of the plasma can be raised above a certain threshold the herpetic virus will be unable to produce active lesions. Two methods of raising the antibody titre have been employed. Hruszek (1933) claimed a high percentage of success by vaccinating patients with the vesicular fluid of their own early herpes lesions. In 1936 I described a more cautious method in which a formalized 10 per cent. suspension of herpes-infected pads of guinea-pigs was used, and very successful results were obtained in a few cases of frequently recurring herpes, although some cases did not respond at all. With Hruszek's method it is sometimes difficult to get positive "takes" from patients' vesicles. Sufficient data, however, are not at present available by which to estimate the relative value of these two procedures.

So, in the case of herpes, specific treatment of some value may be tried, but its success cannot be guaranteed, and such treatment should undoubtedly be reserved for cases of frequently recurring herpes which are not improved by local *x* rays and general tonics. It might be added that fractional doses of *x* rays—for example, one-third pastille dose (90 kV, 3 mA, 0.5 mm. Al screen, 120–150 *r*) repeated at three weeks' interval, for three doses—to a constantly affected site of eruption seem to desensitize the skin and often prevent or mitigate the severity of the subsequent lesion.

In the case of zoster, of course, the eruption rarely recurs, and since the slight warnings of an impending attack are often unappreciated until the eruption appears prophylactic treatment can seldom be attempted. No doubt zoster convalescent serum would be of considerable use if it could be given three or four days before the eruption occurred, but for the reasons stated this is usually impracticable. When the disease is manifest specific treatment is unlikely to avail, and perhaps the two most successful treatments are posterior pituitrin extract by injection and sodium iodide in large doses by mouth or intravenously. Unfortunately, the extreme variation in severity and duration of the attacks of shingles makes it very difficult to assess the value of any therapeutic measure, but impressive results have been recorded after the use of these drugs.

Warts and Molluscum Contagiosum

With regard to warts and molluscum contagiosum the virus is embedded in the nucleus or cytoplasm of the epidermal cells, and it seems unlikely that the quiet reaction it provokes would account for any significant antibody response on the part of the host or, if such antibodies were circulating in the blood stream, that these would be able to penetrate the cell membrane and affect the virus.

I have been unable to demonstrate the presence of antibodies in patients' serum and have had no therapeutic success from injecting vaccines prepared from warts or the lesions of molluscum contagiosum. The spontaneous disappearance of warts is more likely the result of an abiotic change in the virus than of the destruction of the virus by specific antibodies. Of the non-specific methods of treating warts probably paints of various kinds are most commonly employed. A well-known one is 10 per cent. salicylic acid in flexible collodion. Owing to the horny surface of a wart it is essential to use a keratolytic substance, and caustic potash, phenol, and glacial acetic acid belong to this category. A useful combination is the following:

Phenol	10 parts
Glacial acetic acid	10 „
Salicylic acid	10 „
Strong tincture of iodine	20 „
Industrial methylated spirit ...	ad 100 „

Success may often be obtained by constant daily applications of such remedies, assisted by the cautious paring away of the keratin layer. Attention has recently been drawn to successful treatment by covering the warts with strapping, but this method, too, often fails.

In other cases it would appear that warts disappear if mild inflammatory reactions are provoked in their vicinity, and it is quite likely that the success which often follows *x*-ray therapy is due to this fact. Ionization is another good method which probably acts in the same way; it has proved particularly useful in the case of paronychial warts. The lesions are cleaned with ether and then painted several times with liquor potassae to soften the keratin, remove grease, and increase the conductivity of the skin. The fingers are then dipped in a 1 per cent. solution of magnesium sulphate which is in contact with the anode of a galvanic battery, and a current of 5 to 10 milliamperes is passed for thirty minutes. Dr. Grace Griffith has obtained considerable success with this method in my clinic at St. John's Hospital for Diseases of the Skin. As a rule weekly treatments were given, but in obstinate cases more frequent applications were advantageous.

No doubt the occurrence of spontaneous resolution occasionally accounts for a success claimed by the milder methods of treatment mentioned above. This applies to a greater degree when one considers the general methods employed in the treatment of warts, and the multiplicity of these treatments indicates their unreliability. An old-fashioned remedy is 1 oz. of liquor calcis three times daily, and it has been claimed that magnesium sulphate in doses sufficient to produce three liquid stools a day is often successful. Small doses of arsenic by mouth have been advocated, and a more recent treatment is the intramuscular injection of mercury salicylate. Others prefer pills containing the green iodide of mercury in doses of one-sixth to one grain three times a day. My measure

of success with any of these methods has been so small that spontaneous resolution might easily have accounted for the few cures following internal medication. No mention has been made of the numerous methods of treating warts by suggestion, and although it is admitted that sometimes the results obtained by such means are very dramatic, no reasonable explanation can be given as to how such influences work in a disease so definitely organic; but if the percentage of success could be ascertained it might compare with the incidence of natural spontaneous disappearance.

It is admitted that in some cases nothing short of total destruction of the wart by cautery or CO_2 snow or the removal of the entire lesion by curette will effect a cure.

REFERENCES

Andrewes, C. H., and Carmichael, E. A. (1930). *Lancet*, **1**, 857.
Brain, R. T. (1932). *Brit. J. exp. Path.*, **13**, 166.
—— (1936). *Brit. J. Derm. Syph.*, **48**, 21.
Hruszek, H. (1933). *Derm. Z.*, **68**, 27.
Laidlaw, P. P., Smith, W., Andrewes, C. H., and Dunkin, G. W. (1935). *Brit. J. exp. Path.*, **16**, 275.

LYMPHANGIOPLASTY—THE FATE OF SILK

BY

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With a Note by

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In 1916 I gave an account in this *Journal* of a successful case of lymphangioplasty for brawny oedema of the legs, and wrote: "It is said that, whereas lymphangioplasty gives great relief in the brawny arm of cancer of the breast, in lymphatic oedema of the leg its results have not been satisfactory." Recently the patient I described then came to the Haywood Hospital. It is hoped that the follow-up of the case, with a few remarks about the theory of lymphangioplasty and the fate of silk buried in the human body, may be of interest.

Case Report

As a child, aged 13, in 1901 the patient was scalded on the lower parts of the legs and on the ankles and feet. Healing was very slow, and she was unable to stand for six months, and then had to learn to walk again. From the age of 16 to 21 she had a sedentary occupation as a telephonist. At 23 she became a barmaid, but after two years her legs became swollen, heavy, and painful, and she had to give up her work as it entailed long standing. In 1913, after treatment at two of the best provincial hospitals had proved unsuccessful, she came under my care.

On June 30, 1913, lymphangioplasty by Sampson Handley's method, using No. 12 woven tubular silk, was performed on both thighs and legs at the North Staffordshire Infirmary. The operation is easy, and special instruments are not required. Improvement was slow but continuous, and the legs regained their normal shape. When next seen, in July, 1916, she could walk sixteen miles in a day without any swelling of the legs or discomfort. The case was shown to the North Staffordshire Medical Society three years after operation.

On December 30, 1936, she was seen again as an outpatient because she had bruised her right ankle and a small ulcer which resulted was not quite healed. She is now 49, and can walk miles; the legs are shapely and quite normal, except for the scarring left by the scalds. The case was shown again to the North Staffordshire Medical Society on December 10, 1936.

RADIOLOGIST'S REPORT

Dr. Kemp Harper reported as follows:

"When this patient was *x*-rayed faint opaque linear shadows, some fragmented, were seen in the soft tissues in the position where the silk threads were introduced twenty-four years ago. We decided that calcification had occurred in pieces of silk which still remained unabsorbed after this long interval; it was felt, however, that some proof of this was required. As a biopsy was refused by the patient, experiments were made. Long pieces of silk (unimpregnated) were attached to the legs of a subject and films taken; these showed no sign of opaque linear shadows. Similar pieces were then soaked in a weak barium sulphate solution, and areas of density were seen somewhat similar to those on the original films. Silk thread was obtained from the operating theatre of a fairly similar thickness, and this, to our surprise, was quite uniformly opaque. On inquiry we found that the silk had been sterilized in perchloride of mercury, and that the opacity of the silk depended on the length of time it had been in the sterilizing solution.

"As a result of these investigations we feel confident that portions of silk have persisted in the soft tissues for twenty-four years, and these pieces, unabsorbed, presumably as the result of walling off with dense fibrous tissue, are still visible. Two reasons can be advanced for this: (1) that the silk or surrounding layer of fibrous tissue has been rendered opaque by the deposition of calcium; or (2) that mercury has remained in the silk unabsorbed for this length of time. The latter reason cannot be definitely ruled out as injections of metallic substances into the buttocks in cases of specific disease are often seen on *x*-ray examination of the same region years after such injections have ceased."

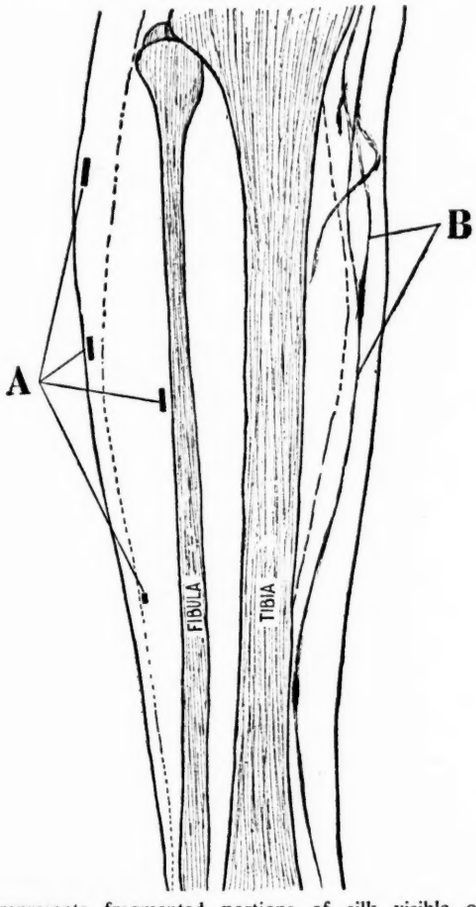
Theory of Lymphangioplasty

Brawny oedema is due to lymphatic superadded to venous obstruction. A marshy field can be drained by lines of buried porous pipes, but unfortunately a perforated drainage tube buried in the human body becomes blocked by the organization of cellular elements and the coagulation of fluids which have entered its lumen. Sampson Handley (1908, 1910) made the brilliant and promising suggestion that silk threads would continue to drain by capillary attraction. He showed a section of a silk ligature which had been embedded in the tissues for ten years. "Though eroded at its surface the main substance of the thread is intact. Moreover, leucocytes are evidently unable to penetrate between the fibrils of the silk, for the interior of the thread is entirely free from cellular elements. Nor is there any microscopical indication of the coagulation of the body fluids in the interstices of the silk." Handley thought the capillary power was retained, but the question arises, Is there an impermeable sheath of fibrous tissue around the silk? This is the crux of the whole matter.

Lymphangioplasty was tried, and many early successes in the treatment of the brawny arm of cancer of the breast and in various simple lymphangiomas or oedemas of the arm were reported years ago. But Handley himself suspected that the operation would fail in the leg because it could not provide a motor force which would be able to overcome the full pressure of gravity in the lower limb.

The operation was tried, chiefly in Cairo (Madden, Ibrahim, and Ferguson, 1912), for elephantiasis of the legs, and always failed. The Cairo authorities gave histological details and made experiments, but their cases were not followed up long enough. They found that the trauma of the introduction of the silk and the irritation

it set up as a foreign body caused the formation of granulation tissue, which contracted, strangling all the channels within its grasp. "Finally, the silk thread is isolated like a long worm lying loose in an impermeable sheath." If this is true, it would appear that lymphangioplasty is unsound in theory, and can give only temporary benefit even in the arm. If drainage is effected and does persist, we can only suggest that the density of the fibrous sheath may depend upon the nature of the silk used and its mode of preparation, or that it remains incomplete (fenestrated) or otherwise permeable by fluids. (The hardest fibroids are living and moist, and evidently lymph percolates through them.) It hardly seems possible that the sheath is absorbed as time goes on, leaving the



A represents fragmented portions of silk visible on the radiograph in the soft tissues of the outer aspect of the leg; on the inner aspect (B) are faint opaque linear shadows.

silk to act as a drain. Lymphatic vessels and lymphatic glands can arise *de novo* in the human body, and possibly a collateral circulation of both lymph and venous blood develops; the blocked vessels may also regain their patency. All these matters call for discussion, however, for we cannot agree that the silk is destroyed: our radiographs prove the contrary.

The Fate of Silk

Thirty years ago surgeons used silk much more freely than nowadays. We were rather afraid of embedding long pieces, because if they became infected—from external or internal sepsis—trouble followed, and sooner or later the silk would be discharged. We were not certain to what extent the silk would be absorbed, or whether it would remain permanently embedded in a sheath of fibrous tissue, or persist in some altered form. It appears that this uncertainty remains to this day; for instance, it is easy to find in the literature such statements as: "it is claimed that Japanese silk is absorbable"; and of silk saturated with mercuric biniodide and stored in liquid paraffin: "it is not absorbed, but is assimilated by the tissues forming the basis of a structure closely resembling tendon. It gives rise to no irritation and does not tend to work out." (In the case reported here Chinese twist impregnated with biniodide of mercury was used.)

We submit that our radiographs prove that some of the silk inserted in our patient twenty-four years ago has remained practically unaltered without causing the slightest trouble. Therefore, we cannot agree with the Cairo authorities who found—in healthy guinea-pigs after twenty-one days— that "the fibrils of the silk were slightly separated and broken up into strands by trabeculae of connective tissue passing inwards into the thread," and that "this process must eventually lead to its complete disappearance and the formation of a solid column of dense fibrous tissue along which no absorption of fluid of any kind can possibly occur." In some of their sections the silk was so loose that it fell out, and, therefore, could not have been invaded.

Conclusion

As regards the case reported, the perfect result cannot, after mature consideration, be claimed as due to the lymphangioplasty. It is not known why the brawny oedema came on so late, and the improvement after operation was "slow but continuous," whereas the benefit other surgeons have described has appeared soon after operation but has not persisted. We give all the credit to the *vis medicatrix naturae*.

My thanks are given to Dr. Kemp Harper for his excellent work, and to Dr. E. C. Myott of Stoke-on-Trent for kindly help and criticism. As it has been found impossible to reproduce sufficiently clearly the opacities seen on the original films prints have not been forwarded, but the films have been placed in the hands of the Editor of the *British Medical Journal* for his scrutiny.

Bibliography

Handley, W. S. (1908). *Lancet*, **1**, 783, 1207.
—— (1910). *Brtish Medical Journal*, **1**, 853, 922.
Hartley, H. (1916). Ibid., **1**, 110.
McDill, J. R. (1913). *Surg. Gynec. Obstet.*, **17**, 523.
Madden, F. C., Ibrahim, A., and Ferguson, A. R. (1912). *British Medical Journal*, **2**, 1212.
Mitchell, A. B. (1909). Ibid., **2**, 1462.
Syms, P. (1913). *Ann. of Surg.*, **57**, 583.

R. Castaneda-Palacios (*Dtsch. med. Wschr.*, July 23, 1937) has investigated the Chediak syphilis reaction at Professor Schittenhelm's hospital in Munich, applying it to 536 patients, seventy-eight of whom were syphilitic. The disease was tertiary in sixty-eight cases, secondary in five, primary in three, and congenital in two. Chediak's reaction was positive in seventy cases (89.7 per cent.), whereas the Wassermann reaction was positive only in fifty-six cases (71.7 per cent.). In none of the 458 non-syphilitic patients was Chediak's reaction positive, although they represented a wide range of diseases, including malignancy, infectious diseases, and disorders of metabolism. But the author agrees with Chediak himself in applying clinical and laboratory tests to doubtful cases. He describes a case in which the Chediak reaction was thrice negative, while the Wassermann reaction was at first positive. The patient was a man, aged 41, whose vague cardiac symptoms had suggested a diagnosis of vascular syphilis. The subsequent course of the case and a Wassermann reaction which was negative when repeated suggested that Chediak's reaction was the more delicate and reliable of the two.

GRANULOSIS RUBRA NASI IN A MOTHER AND DAUGHTER

BY

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Granulosis rubra nasi is a condition well known to dermatologists but not often recognized by the general practitioner. Briefly it is characterized by redness and marked sweating confined to the nose and the surrounding area of the face, with red papules and sometimes numerous small vesicles. It occurs most commonly in children, and usually clears up at puberty, but rare cases have been described in adults. The aetiology is obscure, though it is clearly a vasomotor disturbance of some sort. Many causes have been suggested, from tuberculosis to local sepsis, none of which has been satisfactorily upheld to the exclusion of all others. An excellent account was given by Beeson in 1926; this should be consulted for further details.

It is probably not so rare as one might think from the English literature, for according to Maschkilleisson and Neradow (1935) over 130 cases had been recorded up to 1932, and they were able to find thirty-three cases in four years in their own clinic. This is a remarkable number, but in the dermatological department of the Leeds Infirmary there have been six cases in the last 20,000 patients. It is, however, rare to find the disease in successive generations, though less uncommonly it is present in two or more children of the same parents. According to Cockayne (1933) only eight instances are known in which there is evidence of the condition being inherited, and it is because the study of genetics demands the accumulation of such instances that I venture to report the following cases.

Case I

This patient, a married woman of 43 (Fig. 1), has six children, four girls and two boys, of whom the second patient is the third girl. None of the other children are affected, but the second girl has epileptic fits. There is no evidence

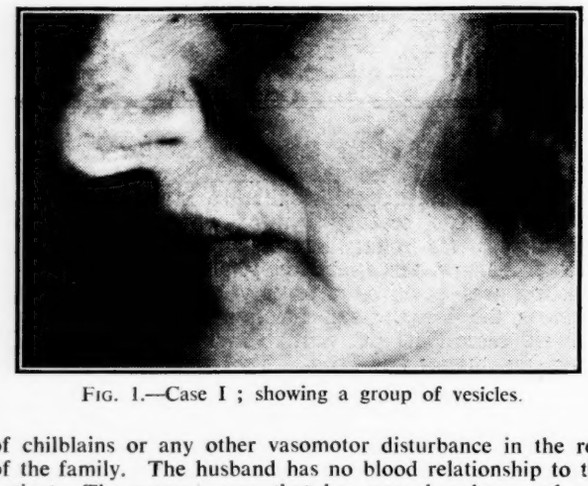

FIG. 1.—Case I; showing a group of vesicles.

of chilblains or any other vasomotor disturbance in the rest of the family. The husband has no blood relationship to the patient. The woman says that her nose has been red and has been covered in perspiration ever since she was 12. Now, especially after exertion but also without it, her whole face over the nose, cheeks, and upper lip perspires heavily. She has not noticed any abnormal sweating elsewhere, her palms, etc., being normally dry. The face does not trouble her at all, except for slight itching at times, and she is not worried about the aesthetic appearance. Apart from her face she is quite well, but she suffers from chilblains on the feet in winter. The general circumstances of the family are rather poor; there is no history of tuberculosis in the family.

Present Condition.—At first sight her face suggests rosacea, but closer inspection shows that the lesions on her nose are a group of clear vesicles. There are about half a dozen of these, 2 to 3 mm. in diameter, situated close to the tip, except one which lies near the naso-labial groove on the right cheek. The cheeks are rather highly coloured, and both in the malar region and on the tip of the nose are numerous fine telangiectases. Beads of perspiration are present over the nose, cheeks, and upper lip, which on being wiped away soon re-collect.

Case II

Daughter of the above, aged 9 (Fig. 2); general health good. Since 3 or 4 years old she has had rather a red nose, and it has constantly been covered with beads of sweat. On examination the most striking thing is the intense perspira-

FIG. 2.—Case II; nose red, but without cysts or telangiectasia.

tion, limited to the nose, which is also rather red towards the tip, but is not so vivid as the mother's. There are no cysts to be seen, nor has she any telangiectasia. She shows no other evidence of vasomotor instability; her palms are dry, and she does not suffer from chilblains.

I wished to treat both these patients by means of *x* rays, but they failed to turn up for treatment, and when visited in their own home said that the condition did not trouble them so much as to require further attendance at hospital. I think this attitude is to be deprecated, as the condition certainly was somewhat disfiguring, and the little girl ought to have been given the benefit of possible improvement.

Comment

The exact mechanism of inheritance in this condition is not quite clear. Some families—such as Lebet's cases (1903), a mother and two girls, and Hallopeau's (1906), a father and three children—suggest that the lesion is a simple dominant, but other families do not bear this out. Cockayne (1933) explains it as follows: "If it is in part dependent on an external factor such as a local infection or a circulating toxin it may be inherited as a simple dominant, but if it is determined solely by a genetic factor the dominance must be incomplete." Apart from this the mother is of interest as representing one of the few cases reported in adults and also in having a cyst on the cheek close to the naso-labial groove.

REFERENCES

Beeson, B. B. (1926). *Arch. Derm. Syph.*, Chicago, **14**, 256.
Cockayne, E. A. (1933). *Inherited Abnormalities of the Skin*, London.
Hallopeau, H. (1906). *J. Mal. Cut. Syph.*, **18**, 241.
Lebet, A. (1903). *Ann. Derm. Syph.*, Paris, **4**, 273.
Maschkilleisson, L. N., and Neradow, L. A. (1935). *Derm. Z.*, **71**, 79.

THE ANTUITRIN S INTRADERMAL PREGNANCY TEST

BY

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Many attempts have been made to devise a pregnancy test which is simple, rapid, inexpensive, and accurate: those of Friedman and Aschheim and Zondek most closely approach this ideal. By repeated and universal trial they are acknowledged to have reached a high degree of accuracy—namely, 99 per cent. in the non-pregnant and 97 per cent. in the pregnant woman. Both tests, however, retain certain inherent disadvantages: they are relatively expensive, they require two and four days respectively for their interpretation, and they demand the co-operation of a skilled biochemist for their performance. Any test, therefore, which is to supersede these must possess not only their proven accuracy but also the properties in which they are deficient.

With these ideals in view, and hoping to overcome the threefold disadvantage of the biological test, Pollatschek and Porges (1929) devised the intradermal sensitivity test, using a preparation of gonadotropic hormone. They claimed absolutely reliable results. Deutsch (1929), Strauss (1930), and Dowell (1933) substantiated the original workers' findings; they were followed by Gilfillen and Gregg (1936), who used a purer preparation (antuitrin S) with similar results. On the other hand, Weisman and Yerbury (1937), using the same technique as Gilfillen and Gregg, reported the following figures: seventeen non-pregnant single girls, sixteen pregnant; twenty-six male medical students and physicians, twenty-four pregnant; nineteen pregnant women, two non-pregnant; from which they naturally concluded that the test was worthless.

Another intradermal pregnancy test was elaborated by Gruskin (1936) and later by Schwartz (1936), using placental extract, the technique and rationale being similar to that of the antuitrin test. Many of their results were, however, equivocal, and the test is now regarded as fallacious in this country (*British Medical Journal*, October 16, 1937, p. 757).

Feeling that no exhaustive trial had been made of the antuitrin test in England, and fearing that its enthusiastic adoption by practitioners might lead to serious clinical error, we determined to investigate its accuracy in a large series of cases, faithfully following the technique of Gilfillen and Gregg and reading the results at one-half, one, and two hours. Our material consisted of 147 cases (forty-nine males and ninety-eight females). Seventy-three of the women were between the fourth and ninth months of pregnancy and twenty-five were non-pregnant, fifteen being in the pre-menopausal and ten in the post-menopausal age.

TABLE I.—*Showing Results of the Active Antuitrin S Test*

	Positive (Non-Pregnant)	Negative (Pregnant)
Males	44	5
Females (pregnant)	51	22
Females (non-pregnant pre-menopausal) ..	13	2
Females (non-pregnant post-menopausal)	8	2

These results were so palpably inaccurate that we abandoned further investigation of the antuitrin test at this point.

Reasoning that the reaction obtained in those cases which showed a positive skin flare was perhaps not due to the active hormonal content of the injected substance but to the presence of foreign protein, we further tested forty-one cases (ten males, thirty-one females), using inactivated antuitrin S. Twenty-one of the females were between the fourth and ninth months of pregnancy and ten were non-pregnant. The results were as follows:

TABLE II.—*Showing Results with Inactivated Antuitrin S*

	Positive (Non-Pregnant)	Negative (Pregnant)
Males	10	0
Females (pregnant)	12	9
Females (non-pregnant)	10	0

From the above figures it is evident that the results of this test are as fallacious as those obtained with active antuitrin S.

Conclusion

The antuitrin S intradermal test for pregnancy, which has been so enthusiastically acclaimed, has proved in our hands to be valueless.

We are indebted to Dr. T. Izod Bennett, who sponsored this investigation, and to Mr. L. Carnac Rivett for permission to test patients under his care. Messrs. Parke, Davis and Co. very kindly supplied the antuitrin S used in this investigation.

REFERENCES

Deutsch, A. (1929). *Zbl. Gynäk.*, **53**, 2920.
Dowell, D. M. (1933). *J. Missouri State med. Ass.*, **30**, 275.
Gilfillen, G. C., and Gregg, W. K. (1936). *Amer. J. Obstet. Gynec.*, **32**, 498.
Gruskin, B. (1936). *Amer. J. Surg.*, **31**, 59.
Pollatschek, O., and Porges, R. (1929). *J. Amer. med. Ass.*, **93**, 559.
Schwartz, E. (1936). *Amer. J. Surg.*, **33**, 225.
Strauss, H. (1930). Ibid., **8**, 1271.
Weisman, A. I., and Yerbury, C. C. (1937). *Med. Rec.*, **145**, 203.

A. Mayer (*Münch. med. Wschr.*, July 23, 1937) discusses from the point of view of sickness insurance the rate of growth of cancer of the cervix. In general he concludes that a woman with this condition who became insured six months before the diagnosis was made must have had it at that time if the growth is inoperable, but may not have had it if the growth is an early one. Stähler, analysing 200 cases, has estimated that the average duration of the initial symptomless period is 2.7 months. Very great variation, however, is shown in the rate of growth. As examples of slow growth cases are cited of women, aged from 34 to 44, who had had symptoms for one to six months but in whom the growths remained operable and practically stationary for ten to fifteen months, so that they were still classified as operable fourteen to twenty-one months after the first onset of symptoms. On the other hand Mayer has seen a woman, aged 22, who had had a blood-stained discharge for fourteen days and presented an early ulcerating carcinoma of the portio with a metastasis in one fornix: ten days later the primary growth had attained the size of a billiard ball and death followed after eight days. Weinzierl found microscopically adenocarcinoma in a non-hypertrophied but eroded cervix, and saw nine days later a cauliflower tumour the size of a small hen's egg, which was found to be an aggressive cylindrical-cell carcinoma of immature cell type with much penetration of lymph vessels.

Clinical Memoranda

Concealed Inevitable Haemorrhage

The case history recounted below seems to present features sufficiently unusual to merit recording.

A primigravida aged 37 years had a smart spontaneous vaginal haemorrhage when at home. No pain or discomfort was experienced, the bleeding stopped without treatment after about ten minutes, and no recurrence of the loss took place. She was given morphine by her family doctor and was kept in bed for ten days, after which time she was sent to the Princess Mary Maternity Hospital, Newcastle.

The patient was a spare, sallow-complexioned woman who looked older than her actual age. The uterine enlargement corresponded with a thirty-two weeks pregnancy, and the shape and consistency of the uterus was normal, apart from a firm rounded mass about three inches in diameter which was palpable on its anterior wall below the umbilicus. The foetus was presenting by the vertex in the right occipito-anterior position with the head above the pelvic brim, and although the foetal heart was not heard obvious movements could be detected. On vaginal examination no blood was seen, but a uniformly tense cystic mass, seemingly intra-uterine, filled the pelvis. The cervix was thinned and the external os, which was found behind the pubes, was closed. The urine and blood pressure showed no departure from normal, and radiography demonstrated an apparently normal foetus and a diffuse pelvic opacity.

After elimination of extra-uterine swellings four possible diagnoses—namely, cystic fibromyoma with pregnancy, foetal abnormality, localized vesicular mole, and placenta praevia with concealed haemorrhage—were considered. Although fibromyomata were present in the anterior uterine wall the tumour was not thought to be a cystic fibroid, as the swelling was symmetrical, diffuse, and intra-uterine in position, and the rectum as seen on the *x*-ray film was not displaced. The presence of foetal abnormality did not offer a likely explanation of the phenomena as the foetal head was presenting and was freely mobile over the mass, and the radiograph showed no skeletal deformity. Placental vesicular mole with a developed foetus and placenta praevia was a possible diagnosis, but it was thought that evidence of such a condition would almost certainly have been met at an earlier date. The Aschheim-Zondek reaction was reported as "positive—a good strong reaction." The suggestion that the condition might be due to placenta praevia with concealed haemorrhage was felt to give the most attractive explanation of the case, but the evidence in favour of this was scanty.

Ten days after admission to hospital a large amount of blood clot was passed per vaginam without collapse or fresh haemorrhage. The abdominal findings were unchanged, but vaginal investigation revealed that the cervix was now thick, its canal occupied a posterior position and admitted one finger with difficulty, and, after expression of blood clot, placental tissue was felt crossing the internal os.

Haemorrhage commenced during the examination, and was temporarily controlled by a firmly applied abdominal binder. Upper segment Caesarean section was performed about twenty minutes later, and a child of 4 lb. was delivered in a state of asphyxia pallida, from which it did not recover. Old blood clot and the placenta were removed from the lower uterine segment, three small fibromyomata were enucleated from the vicinity of the uterine incision, and the incisions were sutured. A larger posterior fibromyoma related to the pouch of Douglas was left *in situ*.

The patient was not unduly upset by the operation, convalescence was uneventful, and the parietal wound healed satisfactorily.

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Reviews

GASTROSCOPY

Gastroscopy: The Endoscopic Study of Gastric Pathology. By Dr. Rudolf Schindler. Preface by Dr. Walter Lincoln Palmer. (Pp. 343; illustrated. 34s. net.) U.S.A.: The University of Chicago Press; London: Cambridge University Press. 1937.

It is fourteen years since Dr. Schindler published his *Textbook and Atlas of Gastroscopy*, which did a great deal to bring about a revival of interest in gastroscopy in the years immediately after the war. The present volume is, fortunately for us, written in English—in a quaint but expressive style. Dr. Schindler is to be congratulated on having produced a book in such readable English only three years after he left Munich to go to Chicago. In an entertaining chapter on the history of gastroscopy he relates how near Glasgow came to being the birthplace of gastroscopy, but the sword-swallower whom Campbell asked to oblige him only replied, "I know I can swallow a sword, but I'm —— if I'm going to swallow a trumpet."

In the discussion on anatomy it is pointed out that the stomach has, under the conditions of gastroscopy, a shape differing enough from the usual topographical description to make orientation uncertain unless these differences are realized, the most important of all being the torsion of the lesser curvature. The chapter on technique is long, and full of advice valuable even for the comparatively experienced gastroscopist, orientation being dealt with in great detail. The rapidity with which he insists on the instrument being passed will surprise some English gastroscopists.

Dr. Schindler's indications for gastroscopy are many. He implies that all gastric ulcers should be gastroscoped to determine whether malignant degeneration has occurred, for he believes it can be diagnosed even earlier by gastroscopy than by naked-eye examination after removal of the stomach, when the normal colours, dependent on its blood supply, are destroyed. All cases in which a carcinoma is suspected should be examined to determine the diagnosis, and where the presence of a carcinoma has been shown by *x* rays and there is no obvious metastasis, gastroscopy should be carried out to determine the degree of intragastric spread and the question of operability. In the majority of cases he claims that he can save a purely exploratory operation. Here the not infrequent occurrence of a removable carcinoma with hepatic secondaries is ignored. In duodenal ulcer the gastroscope may show any additional gastric ulcer or gastritis, and often the presence of haemorrhagic spots, some of which may have progressed to erosions or retrogressed to pigment spots. This finding may have some bearing on both aetiology and prognosis. Cases of gastro-intestinal bleeding should be examined, particularly as the cause is either not shown at all or only inadequately by *x* rays, and the same applies to that large group of patients so frequently labelled as "bowel distress" or "gastro-intestinal neurosis," in which a more or less severe gastritis is often the cause of the symptoms. Among the other indications are unexplained loss of weight or appetite, and unexplained vertigo, certain chronic dermatoses and urticaria, and dyspepsia in syphilitics.

The diagnosis of chronic gastritis is the main justification for gastroscopy, and Dr. Schindler sets forth his views on the classification and diagnosis of the various types of gastritis clearly and dogmatically. His clinical data and acumen are considerable, but what we miss is a

fuller correlation between the morbid anatomy, the clinical picture, and the endoscopic pathology. The microscopic sections illustrating the changes in the gastric mucosa could have been more numerous and perhaps a little more clearly reproduced. The classification roughly corresponds to Faber's, and comprises superficial, atrophic, and chronic hypertrophic gastritis, with a special division given to post-operative gastritis, a very frequent disease producing more distress than the patient—debilitated no doubt by disease—has the heart to complain of to the well-meaning but unduly optimistic surgeon. However, unlike some of the German authorities, Dr. Schindler does admit having seen good results from gastrojejunostomy, and in the absence of severe gastritis even the development of a sphincteric action at the stoma. The fact that he finds antral gastritis so much less frequently than the pathologists might be due to the peculiar technical difficulties preventing close inspection of the antrum, which in its distal extremity lies too far from the lens and the light to be examined in detail.

The coloured diagrams, though good, fall very far short of the excellence of the originals. The bibliography is full and the index well compiled. This book is the most valuable contribution to gastroscopy yet published, and no gastroscopist will be without it.

EXPERIMENTS ON ANIMALS

The Truth about Vivisection. By Sir Leonard Rogers, K.C.S.I., LL.D., M.D., F.R.C.P., F.R.C.S., F.R.S. (Pp. 182; 9 illustrations. 5s. net.) London: J. and A. Churchill Ltd. 1937.

It is with the detached pleasure of the antiquarian that one reads of the relentless strife and apparently interminable labour of argument that attended the birth of the Darwinian hypothesis. It was all most obviously infuriating at the time, but the hypothesis has since then abundantly justified itself and shown itself adaptable to changing knowledge; no man asks more of a hypothesis than that. The younger medical man of these days has come to view the anti-vivisection agitation with a detached interest similar to that which he brings to bear on the opponents of evolutionary theory. It is not that he forgets their existence; their pamphlets and their shop-window displays effectively prevent that. But to-day scientific and medical men of good will almost instinctively approach such phenomena from the standpoint of the psychologist where "tout comprendre, c'est tout pardonner." We do most fully understand the painful emotional state of the anti-vivisectionists, and we realize how bad is the prognosis for their ultimate comfort. For it should be remembered that the logical anti-vivisectionist (logical, that is to say, within the limits of his own pseudo-paranoia) must also be an anti-vaccinationist, a vegetarian, and an opponent of the germ theory of disease. To do them justice, many of them are all these things; so the anti-vivisectionist has much to worry about.

The question that must be asked is, Has the scientist, the exponent of animal experiment, anything to worry about? If so, then this lucid little handbook is amply justified, for it displays clearly, though necessarily briefly, some of the great structure of achievement both in medical and veterinary science which has resulted from experiments on animals. It quotes from the anti-vivisection literature to illustrate their arguments and the style of their propaganda and the basis of their anxiety. But in none of these need the scientist find much cause for worry. It is suggested, however, that an anomaly of some importance lies in the fact that it is still permissible in law for bequests to be made to societies whose anti-social activities include active opposition to the inoculation against typhoid of troops serving in foreign wars, and that in the last war such opposition was influential enough to ensure, in spite of the proven efficacy of such inoculation, that it should not be made compulsory. This achievement by the "antis" is certainly a striking testimonial to an influence which may have been thought by many to be on the wane. It is the influence of money and enthusiasm, and one is to understand from this book that the "antis" have plenty of both these serviceable commodities. It is a combination whose possibilities for harm cannot be ignored and which, in these days of widespread poverty and emotional imbalance, of dictatorships, and of group-movements, may at a crucial time achieve results disastrous to the progress of experimental science. Sir Leonard Rogers may, with a clear conscience, say, "You have been warned."

OBESITY AND ITS TREATMENT

Obesity. A Practical Handbook for Physicians. By W. F. Christie, M.D. (Pp. 204; 16 illustrations. 12s. 6d.) London: William Heinemann (Medical Books) Ltd. 1937.

Medical interest in the problem of obesity lagged behind that of the public, and consequently when patients clamoured for knowledge as to how they should reduce their rotundity the practitioner was only too often at a loss to know what advice to give. The opportunity was not overlooked by various purveyors of crank diets, with the result that most extraordinary and diverse slimming schemes were adopted, with good, bad, or indifferent results. Now that we have somewhat tardily recognized that obesity is a disease which should be treated, articles of value have appeared from time to time in the medical journals, dealing as a rule with the aspect of treatment only.

The volume under review has a wider aim. Its first part consists of a discussion of the nature of adipose tissue, its storage, and the different types of fat found in different situations and their relation to the type of food taken in excess. It passes on to a discussion of the causes of obesity, and the author wisely warns against the assumption, so flattering to the patient and not infrequently to the physician, that the trouble is one of endocrine dysfunction. The main clinical features of different types of obesity are discussed, and the section on prognosis is worthy of study. A section of particular value is that dealing with the calorie expenditure for various common activities, such as moving about in a room, talking, and so on, and it is extraordinarily interesting to observe in the light of these figures what erroneous ideas many of us have as to the weight-reducing properties of different forms of exercise. Dr. Christie is in agreement with most of those who write with knowledge of this subject that quite a small proportion—in his case 18 per cent.—of patients admit to a peculiar liking for taking food in considerable quantities. Even allowing for the fact that many gluttons will not admit to gluttony, yet there is no doubt that most of those who suffer from obesity have, in point of fact, a small appetite. He points out that the putting on of weight in spite of this is to a large extent the result of the modern tendency to concentrate nourishment into small bulk. Thus, patients who declare that they only have a small sandwich and a glass of beer for lunch would be surprised to find, according to the author, that a sandwich made of cheese and bread, accompanied by a glass of beer, produces 530 calories, in comparison with a lunch of two slices of roast beef, two potatoes, half a pound of brussels sprouts, and a glass of red wine, which brings up the calorie value to only 460.

The second part of the book deals with treatment, and rightly occupies the greater part of the volume. Numerous useful hints are given as to the prescribing of a reducing diet which will function slowly but effectively, rather than those which reduce weight with great speed but which produce a feeling of extreme exhaustion and hunger in the victim. The difficulty is that with these diets which work but slowly, removing a pound or two a week, it demands more will-power of the patient than is usually forthcoming. Most people desire rapid reduction of weight, if only from the point of view of settling once and for all the question of an entirely new wardrobe, and the prolonged effort to keep a check on food intake is more than many can endure. Although brief reference is made to a tendency to water retention in some cases of obesity, the matter might be elaborated with advantage in later editions. All those with experience of these cases realize that, though the vast majority of patients can be reduced in weight by means of dieting alone, every now and then a case appears which is absolutely resistant to virtual starvation. It is in these that one often finds a strong tendency to water and salt retention, and the use of some of the modern mercurial organic diuretics, associated with limited fluid intake and salt restriction, may act as a charm.

Details of muscular exercise are not given, but Dr. Christie wisely refers the matter to Mr. Hornibrook's book entitled *The Culture of the Abdomen,* which has been responsible for the restoration of waistline and bowel function in so many thousands of individuals during the last few years. The book is unquestionably good and thoroughly practical, and will be welcomed by general practitioner and consultant alike.

SPONDYLOLISTHESIS

La Spondylolyse et ses Conséquences. Spondylolisthésis, Scoliose Listhésique. By Pierre Glorieux and Carle Roederer. (Pp. 208; 138 figures. 60 fr.) Paris: Masson et Cie. 1937.

In publishing this treatise upon spondylolysis and its consequences spondylolisthesis and listhetic scoliosis, the authors have done a valuable service in giving a careful review of the very large literature that is growing up upon the subject more generally known as "spondylolisthesis." This lesion used to be considered a rarity of interest to the obstetrician only as a cause of difficult labour, but now increasingly recognized as a very common and important factor in many cases of low back pain and sciatica in either sex.

In the present work the congenital nature of the basic lesion of the posterior neural arch is discussed, with the effect of static influences and trauma in causing displacement of the two portions of the vertebra. Scant justice is done to the very reasonable theories of the mechanics of spondylolisthesis put forward by Capener and other English writers, and in their place is substituted a plausible but even more questionable hypothesis. Upon the radiology of spondylolysis the authors are to be congratulated upon a most painstaking investigation and a series of very clear demonstrations of the pre-slip stage. They stress the importance of radiography of the lumbo-sacral region in the erect posture, for in this position infractions of the laminae of the fifth lumbar vertebra may be seen which cannot be demonstrated in recumbency. It surprises us that more use is not made of this position for spinal radiography by those having much to do with static disorders of the spine.

Concerning treatment the authors have little new to offer; they stress the need for conservatism in the earlier stages and reserve operation for those cases in which pain persists or in which there is evidence of continued sliding of the lumbar spine forwards upon the sacrum. This latter circumstance is not infrequently mentioned by writers upon spondylolisthesis, but it is worth noting that no very satisfactory series of radiographs appear yet to have been published showing the various stages of displacement in any single case. Glorieux and Roederer rightly question the anterior bone graft procedure, and give a good account of other operative possibilities besides the well-known Albee or Hibbs type of posterior osteosynthesis. Of particular note is the use of lumbo-iliac grafts, thus copying the natural arrest of spondylolisthesis by ossification in the ilio-lumbar ligaments. Posterior bone grafting is, however, regarded as the easiest technically and very satisfactory in its results. The book concludes with a short chapter on the medico-legal aspects and a bibliography of 300 references.

INFANT HYGIENE

Infants in Health and Sickness. By Robert Ellsworth Steen, M.D., F.R.C.P.I. (Pp. 127; illustrated. 5s.) London: Humphrey Milford, Oxford University Press. 1937.

Dr. R. E. Steen, who contributed the section on care of the infant to the recent edition of Tweedy's *Practical Obstetrics,* has now republished this as a separate volume with a few minor additions under the title *Infants in Health and Sickness.* The main portions of the book are concerned with feeding the normal baby and the principal disturbances of the digestive system. Breast feeding and its management are well described, and the methods advocated when natural feeding fails are in accordance with modern views, the milk mixtures recommended being considerably stronger than those allowed under certain still popular but out-of-date systems, such as that of percentage feeding, which is severely criticized. Diseases of the neo-natal period are well described, as might be expected in view of the origin of the book. Dr. L. B. Somerville-Large contributes a useful chapter on ophthalmia neonatorum, and an appendix contains a valuable collection of diet sheets, which appear to be modified from those in use at the Hospital for Sick Children, Great Ormond Street, London. Dr. Steen must be congratulated on the way in which he presents his matter, and practitioners requiring a thoroughly practical manual on the care of the infant can be advised to buy this modestly priced volume.

Notes on Books

An Atlas of Gas Poisoning was published for official circulation only, in 1918 by the Medical Research Committee, which was the precursor of the present Medical Research Council. The Air Precautions Department of the Home Office has now issued a second edition of this atlas, which is to be sold at the very low price of 1s. The atlas consists of 11 excellent coloured plates with 16 pages of descriptive text. These plates show the typical lesions produced by phosgene and by mustard gas. A large proportion of members of the medical profession have no first-hand knowledge of gas poisoning, and this atlas provides a very easy means of learning the essential pathology of two important types. It should be found particularly valuable by those engaged in training personnel in the treatment of gas casualties.

Professor A. LEMIERRE'S little work entitled *Certain Primary Truths on Infectious Diseases* (Paris, Masson et Cie, 24 francs), which forms the latest addition to the

series edited by Professor L. Ombrédanne and N. Fiessinger, consists of a number of aphorisms, essentially clinical in character, dealing with the various forms of acute infectious disease. After a few pages devoted to clinical examination and methods of exploration, the author deals with the different types of fever (continued, intermittent, remittent, relapsing, and undulant), the various forms of septicaemia, the acute exanthemata, influenza, erysipelas, varieties of sore throat, treatment and prophylaxis. The work is an excellent introduction to the study of the various forms of acute infectious disease.

Dr. ANDRÉ HUREZ has contributed a modest monograph, *Le Traitement des Broncho-pneumonies Infantiles*, to a series on "New Therapeutics," edited by Professor F. Rathery (Paris, J. B. Ballière et Fils, 16 fr.). He summarizes the modern methods available, including the oxygen tent, and has included a useful section on preventive measures.

Amino Acid and Ammonia Metabolism in Liver Diseases, by ESBEN KIRK (Copenhagen: Levin and Munksgaard, 10 cr.), sets out the results of the author's investigation in the form of a degree thesis. Hitherto this line of inquiry applied in clinical work has not proved very fruitful, and this was possibly due to the use of faulty methods of analysis. However, Dr. Kirk, whose experience in analytical technique is considerable, in applying newer and more reliable methods has not met with much greater success. His most important finding is in regard to blood ammonia values, which are enhanced in cases of cirrhosis of the liver, and he offers the suggestion that this abnormality is to be attributed to the existence in cirrhosis of a collateral portal circulation short-circuiting the liver. In presenting these results in English the author should have sought the assistance of someone with greater command of the language.

Preparations and Appliances

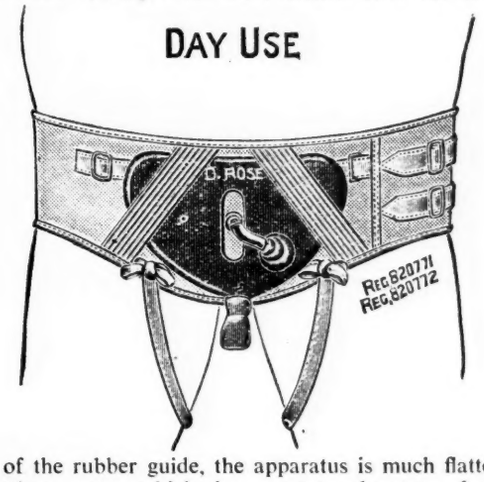
APPARATUS FOR BLADDER DRAINAGE

Mr. D. A. BEATTIE, F.R.C.S. (Bury St. Edmunds), writes:

The appliances at present on the market for drainage of the bladder after suprapubic cystostomy leave a good deal to be desired, and the apparatus illustrated has been designed with the idea of eliminating these disadvantages. It consists of a washable abdominal belt made in cellular material and provided with detachable linen groin straps. This belt is made to measure in each case and is provided with a hole for transmission of the catheter. Drainage from the bladder is provided by the routine method of a soft rubber catheter inserted through the suprapubic opening and kept in position by a circular rubber shield, which itself is held in position by the abdominal belt. Attached to the belt are two elastic and webbing straps, which support and carry the detachable rubber reservoir. This reservoir, unlike the belt, is a standard fitting, and is provided with an oval aperture for transmission of the catheter, enabling it to be used in every case whether the suprapubic opening is high or low in position. The catheter used with the set is somewhat shorter than normal and drains into the reservoir through a special non-return valve, thus eliminating any chance of a reversal of flow while the patient is lying down. The reservoir is provided with a stop cock at its lowest point, protected by a rubber shield, which prevents soiling of the fingers.

In practice the apparatus has proved extremely successful, its greatest asset being that it consists essentially of two separate parts, thus enabling the rubber reservoir to be removed for cleaning purposes, whilst leaving the catheter and shield held *in situ* by the abdominal belt. The abdominal belt, being an accurate fit to each patient, makes for greatly increased comfort, and is easily washed when it becomes soiled. Unlike the usual rubber fitting, which causes excessive sweat production and always feels wet and uncomfortable, this belt allows perfect ventilation, and actually absorbs any small quantities of discharge which may occasionally flow from the sinus.

For night use the reservoir may be detached and the catheter fitted to a night tube, which is supplied with the apparatus and which drains into a receptacle beneath the patient's bed. Owing to the short catheter used and the curved



design of the rubber guide, the apparatus is much flatter than most other types, which is a great advantage from the aesthetic point of view.

The appliance is named the Pseudo-cyst, and has been made for me by Donald Rose, 36, George Street, Manchester Square, London, W.1.

A DETACHABLE GRIP FOR SPINAL PUNCTURE NEEDLES

Dr. F. C. EVE, F.R.C.P. (Hull), writes:

The handle of the usual lumbar puncture needle is evidently in the wrong place, for if it is used as a handle the needle tends to bend or break. In practice, the operator is obliged to ignore the handle and has to grasp the needle near its point between his thumb and fingers, with risk of slipping, bending, or bacterial contamination. Hence Messrs. Thackray of Leeds have made to my design a little detachable grip (1½ by 1/2 by 1/4 inches). It resembles a flat mussel-shell in being hinged down one side and in gaping slightly open (by a weak spring). A longitudinal groove grasps the needle firmly when the grip is pressed by the fingers. The grip is applied at a convenient spot near the needle point, and thus the skin and fascia are pierced without risk of bending or fracture. The grip is then released and falls off. The needle is now advanced with a gentle probing action. Brittle (steel) needles must of course never be used. The outer tissues (especially in wasted subjects and in cisterna puncture) may need force enough to bend badly or (one hears) to break a needle.

STAPHYLOCOCCAL VACCINE PLASTERS

Histoplast vaccine plasters (Thos. Christy and Co. Ltd.) represent an application of the method of treatment of boils, furuncles, etc., which was discovered by Professor Aug. v. Wassermann, who found that furunculosis was due to the acquisition by the skin of a hypersensitivity towards staphylococci and that insensitivity could be induced in such states by the application of vaccines. Histoplast consists of plaster on which a staphylococcal vaccine is embodied in a plaster ointment. The manufacturers quote a considerable number of favourable clinical reports on this method.

OIL OF AUSTRALIAN TEA-TREE

The Belgravia (brand) antiseptic (Belgravia Chemical Manufacturing Co. Ltd.) is a preparation containing volatile oil of the Australian tea-tree (*Melaleuca alternifolia*). This volatile oil is known to be a powerful antiseptic and to be non-irritating.

THE STATE OF THE PUBLIC HEALTH

CHIEF MEDICAL OFFICER'S REPORT*

[SECOND NOTICE]

A summary of the earlier chapters of Sir Arthur MacNalty's annual report for 1936 as Chief Medical Officer to the Ministry of Health appeared last week at page 1033.

Tuberculosis in 1936

There were 28,268 deaths from tuberculosis in England and Wales in 1936—933 fewer than in 1935. The figures for both respiratory and non-respiratory tuberculosis are the lowest ever recorded. There has indeed been a considerable decline in the mortality from respiratory tuberculosis during the past five years. During the year 55,128 new cases of tuberculosis were notified in England, as compared with 55,418 in 1935. The number of cases dealt with by tuberculosis officers for the first time was 94,313, against 89,457 in 1935. In view of the steady decline in the incidence of the disease these last figures probably indicate that greater use is being made of the service for suspected cases. There was an increase of 24 per cent. in the use of *x*-ray examination in the diagnosis and control of dispensary cases, and the great improvement in the personnel of the service noted in Sir Arthur MacNalty's last annual report has continued. Increasing importance is attached to the examination of contacts; it is among these that undiscovered cases of pulmonary tuberculosis are most likely to occur. It is also worthy of note that a relatively larger use is made of beds for observational purposes. This section of the report discusses the unsettled question whether there is or is not an abnormal prevalence of tuberculosis among nurses who attend upon tuberculosis patients.

Venereal Diseases

Facts are given which appear to justify the conclusion that the measures taken under the Venereal Diseases Regulations are lowering the incidence of fresh infections with syphilis in this country and lessening the transmission of the disease to the next generation. There was a slight increase in 1936 in the number of cases of gonorrhoea dealt with for the first time, but it does not follow from this that there has been an increase in the incidence of the disease. Probably the treatment centres in this country are not yet attracting a sufficient proportion of members of the community infected with gonorrhoea, especially in the case of women. During the year 735,554 pathological specimens were examined in the approved laboratories and centres, an increase of 23,148 over 1935.

The Cancer Problem

There is still no indication of any decline in cancer mortality; indeed, the crude mortality figures again show an increase for the year under review, and, moreover, a greater one than in 1935. The certified deaths for both sexes numbered 66,354 for 1936 against 64,507 for 1935, an increase of 1,847. As pointed out in previous annual reports, there are reasons for believing that the recorded increases in mortality do not necessarily connote an augmentation of general causational factors, but the rising rates add to the difficulty of the administrative problem of providing adequate means for diagnosis and treatment. Investigation into the causation of cancer proceeds, however, with increased zeal in two main directions with promising results—namely, the action of carcinogenic substances and that initiated by the discovery of virus tumours in fowls. With our present knowledge, preventive measures are almost limited to modifying certain environmental conditions arising in a few occupations and to surgical treatment in the individual conditions predisposing to cancer. As regards curative treatment the chief hope lies in earlier diagnosis, which enables earlier treatment to be undertaken with greater promise of lasting cure. Adequate treatment means, however, not only earlier diagnosis but adequate facilities for treatment by operative surgery, radium, and *x* rays. A careful investigation shows that these facilities, especially as regards radiation treatment, though increasing, are as yet by no means sufficient. Suggestions are made whereby modern methods of diagnosis and treatment might be placed at the disposal of a larger section of the population.

Relation of Food to Health and Disease

Investigations on nutrition problems were actively pursued. The Advisory Committee on Nutrition, in addition to its memorandum *The Nutritive Value of Milk*, has made progress in other directions—for example, the amounts of different foods required for correct nutrition, and cognate matters. The League of Nations has also devoted much consideration to the subject, and has published the result of its inquiries in four important volumes. In respect of investigations on nutrition which were initiated by and have been done under the supervision of the Ministry, studies have been made on the diets of sixty-nine working-class families in Newcastle-on-Tyne, and another study of the same type in the West Riding of Yorkshire on the growth rate of infants, on physiological tests of physical efficiency, and on the condition of the blood in expectant and nursing mothers. Investigations have also been made on the diets in public assistance institutions, and suggestions have been made with a view to improving them. The recent development manifested in the establishment of milk bars also receives notice, and the conclusion is drawn that if "operated on the proper lines their introduction is undoubtedly of advantage to the community in fostering the consumption of one of the most nutritionally valuable foods we possess." The necessity for pasteurization is emphasized. Evidence is accumulating that "there is no significant difference in nutritive value between raw and pasteurized milk." In 1936 food poisoning outbreaks were much fewer than in 1935, the number about which the Medical Department obtained information being eighty-two, as contrasted with 137.

Medical Intelligence and Research

A list is given of nearly sixty committees on public health and medical questions on which members of the Ministry's staff have served, without counting committees and subcommittees of the Medical Research Council. Eighteen reports and memoranda of special medical interest were issued during the year. Research in medical statistics is shown to have revealed such matters as that, in schools, the largest factor of lost time is disease of the respiratory organs, especially the common cold and influenza, and that generally speaking the rates of mortality in the group of depressed areas have improved "at the same rate as or even a little faster than those of England and Wales as a whole." But the general results also showed a very great contrast between the death rates in various areas, and there is no ground for relaxation of effort.

Two features of this section of the report are those dealing with new drugs of the so-called "prontosil" group, and some of the dangers attaching to the use of lipstick, certain classes of hair dyes, and some modern "slimming" remedies. Other matters dealt with range from a discussion on diphtheria prophylactics and water supplies to the "disinsectization" of aircraft and the therapeutic use of snake venom. Full particulars follow of port health administration during the year, and of international health work. In connexion with the former an account is given of the remarkable outbreak of yellow fever on board the s.s. *Sea Rambler*. The remainder of the report consists of statistical and other appendices. Among these may be mentioned Appendix A, devoted to investigations of streptococci, and Appendix B, which deals with thrombo-angiitis obliterans and the alleged relation of this disease to smoking.

* *On the State of the Public Health.* Annual Report of the Chief Medical Officer of the Ministry of Health for 1936. H.M. Stationery Office. (4s. net.)

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TOMOGRAPHY

The discussion on tomography at the Royal Society of Medicine this week (see p. 1088) bore witness to the interest that is being aroused by this new method of radiography, especially in the investigation of pulmonary disease. It is well, therefore, to consider the claims made for it and the possibilities of future development. The method, conceived by Bocage in 1931 and recently brought to practical realization through the work of Ziedses des Plantes,[1] Grossmann,[2] and Chaoul,[3 4] has the fundamental aim of "focusing" *x* rays in such a way as to eliminate those superimposed shadows which may make a plain radiograph, even in expert hands, so difficult to read. The principle is simple. If the *x*-ray tube and the film are coupled together by a pendulum or lever, and caused to move during the exposure in opposite directions, objects within the body situated in the plane of the axis of rotation of the pendulum or lever are sharply defined, while objects in other planes are blurred. Those which lie close to the selected plane are the least blurred, those furthest from it are the most blurred. By varying the extent of the movement a plane of body tissue of any desired thickness can be investigated. In practice effective sharpness is obtained in a stratum of tissue of a few millimetres up to a centimetre or more in thickness. The optimum movement for any given purpose is variable, and a wide field exists here for experimental study. The only disadvantage of tomography is a slight loss of definition due to blurring caused by structures lying very close to the desired plane, but this is more than offset by the increase in contrast and effective isolation of the structures to be studied.

By tomography of the lung Chaoul[3] demonstrated that a cavity invisible in plain films could be clearly seen in the tomogram; its depth and size could be estimated, and the type of the cavity, whether single or multilocular, smooth-walled or "ragged," could be determined. Malignant cavitation sometimes showed special characters distinguishing it from that due to other conditions.[5] Thoracic surgery, the activity, boldness, and scope of which increase from day to day, thus finds ready to its hand an important aid, and in Sauerbruch's clinic tomography is employed for the detection of residual cavities after thoracoplasty, apicolysis, and other operative measures. Interesting examples of such uses have also been described by McDougall,[6] who was the pioneer of tomography in this country and has applied it in particular to the problems of pulmonary tuberculosis.[6 7] The advantages of tomography in diseases of the lung are already manifest, and if no other field were open to it it would have earned a place in our diagnostic equipment. Even in lung radiography its limits are not reached with the investigation of cavities. The larynx, trachea, and bronchi are by this means accessible to study without the aid of contrast media. Janker[8] has shown neoplasms of the larynx and pharynx in greater detail, and with better contrast, than is possible with the usual "soft-tissue" radiography. Canuyt and Gunsett[9] have made tomograms through the larynx in the antero-posterior plane which show very clearly the true and false cords, the glottis, and the laryngeal ventricles, and display the distortions of these structures caused by laryngeal cancer. This appears to us to have very distinct value, particularly in demonstrating the downward extent of a laryngeal cancer into the trachea, the degree of which is difficult to estimate by indirect laryngoscopy. Twining[10 11] has employed tomography for demonstrating bronchial stenosis and obstruction by carcinoma, and the drainage bronchus in cases of lung abscess. When the lung field is completely opaque to ordinary methods a tomogram can show the air tubes, for the gain in contrast obtained by this method enables them to be "dissected out" of the surrounding opacity. Bronchiectatic cavities can sometimes be displayed without the assistance of lipiodol, but tomography is in general inferior to lipiodol bronchography for this purpose; the latter shows far more abundant and sharper detail. The new method has undoubtedly thrown fresh light on those ancient bugbears the hilar shadows. Chaoul[3] and Greineder[12] have used it to confirm the observations of Assmann and others on the part played by the pulmonary vessels in the formation of the hilar shadows; in their hands it has brought out the arteries and veins in considerable detail, and revealed their relations to one another. Sopp[13] has gone a stage further, and in a valuable study of enlarged hilar glands in broncho-

[1] Des Plantes, Ziedses (1932). *Acta Radiol.*, **13**, 182.
[2] Grossmann, G. (1935). *Brit. J. Radiol.*, **8**, 733.
[3] Chaoul, H. (1935). *Fortschr. Röntgenstr.*, **51**, 342.
[4] Chaoul, H. (1935). *Beitr. klin. Tuberk. Brauer.*, **86**, 570.
[5] Chaoul, H., and Greineder, K. (1936). *Fortschr. Röntgenstr.*, **53**, 232.
[6] McDougall, J. B. (1937). *Amer. Rev. Tuberc.*, **36**, 163.
[7] McDougall, J. B. (1936). *Lancet*, **2**, 185.
[8] Janker, R. (1937). *Zbl. Chir.*, **14**.
[9] Canuyt and Gunsett (1937). *Bull. Ass. franç. Cancer*, **26**, 398.
[10] Twining, E. W. (1937). *Brit. J. Radiol.*, September, 696.
[11] Twining, E. W. (1937). *British Medical Journal*, **2**, 237.
[12] Greineder, K. (1935). *Fortschr. Röntgenstr.*, **52**, 443.
[13] Sopp, J. W. (1936). *Beitr. klin. Tuberk.*, **88**, 637.

pulmonary tuberculosis has proved that tomography can help to open up the jungle of the "radiographic hilum." When it has come into routine employment we may expect to hear less and less of "thickened roots" and more and more of pathological facts, precisely stated.

Although the main interest has up to the present been directed to tomography of the chest, it is becoming clear that it has much to offer in skeletal radiography. It may solve two types of problem familiar to all radiologists. The first is that of a bone of low density and delicate structure, hidden by denser structures: common examples are the sternum, patella, zygoma, sternoclavicular joints, atlas and axis, temporomandibular joints, hyoid bone, thyroid cartilages, and many others, which at present require special techniques involving oblique incidence of the rays, with consequent distortion. The second type of problem is that concerned with regions in which there is a multitude of overlapping structures, as in the skull and spine. It is not possible to consider here in detail how valuable tomography is proving itself to be in such cases. Twining [10 11 14] has given examples of its value in radiography of the skull, sinuses, and spine, and in ventriculography. Janker[8] has applied it to the study of the spine and long bones, to the differential diagnosis of sarcoma from simple disease of bone, and to other conditions of orthopaedic interest. He has also employed it in ventriculography,[15] and considers that it may be of real aid in the localization of brain tumour. It would be absurd to allege that tomography in its present form can replace the older methods, especially stereoscopy; but in conjunction with them it has much to offer. The great need at the moment is for the apparatus to be available at a reasonable cost for routine work. Only in this way can the indications for tomography be learned and its many possibilities exploited. It has been shown by Twining[14] in this country, and later by Colyer (at a demonstration at the British Institute of Radiology, May, 1937), that tomography can be carried out efficiently with simple and inexpensive attachments to standard apparatus for radiography. We believe that this lead will shortly bring about the development by manufacturers of such attachments. Most publications have dealt with work carried out with the excellent pioneer apparatus of German firms, which is somewhat expensive. Given the necessary increase in facilities it can hardly be doubted that in a few years all radiological departments will employ tomography as a routine measure, much as they now use stereoscopy, not, of course, in every case but for particular purposes which it alone can fulfil.

[14] Twining, E. W. (1937). *Brit. J. Radiol.*, **10**, 332.
[15] Janker, R. (1937). *Zbl. Neurochir.*, **1**.

DANGERS OF "SLIMMING"

Sir Arthur MacNalty, in his annual report as Chief Medical Officer of the Ministry of Health for 1936 (of which our summary concludes this week at p. 1074), makes some pointed remarks on the danger of taking drugs for "slimming" except on medical advice. He thinks that one drug, dinitrophenol, should not be taken in any circumstances, for medical literature is strewn with records of disasters from its use. Nor have these disasters always been due to overdose or carelessness. The fatalities have not been few, and, short of that, grave disabilities and impairment of health have resulted. Among the more serious evils which have followed in the train of this noxious drug are cataract, agranulocytosis, exfoliative dermatitis, and toxic jaundice. Moreover, there is no known antidote nor can the measure of susceptibility to it be estimated. Sir Arthur rightly concludes that it would be well if its existence were forgotten.

But this is only an extreme instance of the harm which is being done by the slimming cult. Haphazard and light-hearted use of thyroid extract for weight reduction is another. This can only bring discredit on a drug which when suitably administered is of the highest value if hypothyroidism is present. Otherwise its general effect may be described as the dehydration of fats—a process which is complete within ten days—and an increase in the basal metabolic rate. Now this rate is by no means always subnormal in obesity, and may even be higher than normal. In such circumstances the use of thyroid may be followed by tachycardia, glycosuria, and other signs of hyperthyroidism. Moreover, it is often overlooked, even by the medical profession, that the new scale of doses in terms of thyroideum siccum is about five times as strong as the old scale in terms of the fresh extract. Naturally, serious results have followed an unintentional change from the old scale to the new. There is another aspect of this question. Professor E. C. Dodds, quoting Murray Lyon and Dunlop to the effect that 9 grains of thyroid extract are required to produce a loss of weight equal to that produced by a standard 1,000-calorie diet, has pointed out that it would be dangerous to use thyroid extract in the treatment of obesity in a person who is over-eating and therefore might easily be taking 5,000 calories a day; and if even 18 grains of thyroid were given the total energy balance would still exceed requirements, so that the individual would not appreciably lose weight. But we should not agree with him that every case of obesity can be cured by diet alone, if thereby he implies that this can be done without disturbance of health. During the food restric-

tions of the war it was noted that the subjects of hypopituitarism did not appreciably lose weight, but their tissues became more watery. Indeed, of late the factor of water retention by the obese has received a good deal of attention. The whole subject is much more complicated than was formerly supposed, and at present we cannot explain, as Dr. Levy Simpson says, why of two people with normal metabolic rates and similar food intakes and energy expenditure one may be fat and the other thin.

Both the physical and psychological effects of slimming may be harmful in various ways. The resistance to pulmonary tuberculosis appears to be lowered. Liberal make-up will not successfully hide a haggard, drawn expression nor an irritable disposition. Anorexia nervosa may ensue, though it is arguable that here the mental state sometimes induces the desire to slim. Nevertheless the impulse to self-starvation not infrequently originates in a girl being teased because she is getting plump. However, the sex which for many years injured its health by tight lacing is not likely to be deterred from slimming by such considerations. The dictates of fashion will be paramount. Women may retort that they try to conform to the prevailing masculine conception of female beauty; indeed, it may well be that both sexes are therefore to blame.

THE METABOLISM OF MAGNESIUM

Three papers on magnesium metabolism in health and disease by Tibbetts and Aub[1] are very welcome, as up till now but little attention has been given to the part played by this element in man. Magnesium is the metallic element in chlorophyll, as iron is in haemoglobin, but magnesium is important not only in plant life but also in the economy of animals and man.[2] All living cells contain magnesium, which, like potassium, is present in much higher concentration in the cell than in the surrounding fluids. Sodium is more highly concentrated in the latter, and the difference in concentration of electrolytes on either side of the semi-permeable cell membrane is an important factor in the dynamics of cellular activity. If magnesium salts are injected and the concentration of magnesium in the body fluids is raised to the same level as in the cells, the animal becomes flaccid and comatose and dies. This anaesthetic property is used in the treatment of convulsive states, as described in a recent annotation on eclampsia.[3] Just as calcium is essential for the clotting of blood and milk, so magnesium acts as co-enzyme in the cycle of reactions whereby muscle extracts convert glycogen or starch to lactic acid. In spite of the fairly close chemical relation between calcium and magnesium, their distribution in body tissues is very different. Under normal conditions magnesium tends to be higher than calcium in the cells of soft tissues, while calcium is higher than magnesium in extracellular fluids and bones. An average diet provides over 300 mg. of magnesium a day, which is more than enough to maintain the organism in balance.[1] Magnesium exchange is not greatly affected by the ingestion of large amounts of phosphate, and storage of phosphorus is not necessarily accompanied by retention of magnesium or calcium. The excretion of magnesium is increased by the ingestion of ammonium chloride, the amount of magnesium put out being such that it can only have been derived from the tissue cells. Magnesium ingestion increases calcium elimination, but in general there is a surprising lack of parallelism between the metabolism of calcium and magnesium. The alterations in magnesium metabolism in hyperparathyroidism are relatively trivial, and the addition of magnesium gluconate to the diet does not relieve the drain upon body calcium; in fact the reverse is true. In exophthalmic goitre and Cushing's syndrome, conditions in which the excretion of calcium is increased, and in steatorrhoea, in which calcium is absorbed with difficulty, the metabolism of magnesium is normal. In Addison's disease magnesium and phosphate excretion are unaffected and calcium elimination somewhat diminished, in spite of the uncontrolled loss of sodium chloride. Tibbetts and Aub conclude that the usual assumption that calcium, magnesium, and phosphorus necessarily respond as a group is unjustified. These unrelated variations are surprising in view of the rigour with which the electrolytes are maintained at a constant level in the body, and it is especially remarkable that two kations so closely related as calcium and magnesium should behave quite independently. Differences of behaviour of substances *in vitro* and *in vivo* are, of course, an expression of the life and work of the organism. We can already explain some of them by overriding hormone control and by processes of esterification which alter diffusion gradients, but we are still very ignorant of the way in which the body manages intracellular electrolytes such as potassium and magnesium.

[1] *J. clin. Invest.*, 1937, **16**, 491, 503, and 511.
[2] Holmes, E., *The Metabolism of Living Tissues*, Cambridge, 1937.
[3] *British Medical Journal*, 1937, **2**, 536.

INTERNATIONAL CONTROL OF TRAFFIC IN NARCOTICS

An analytical study of the annual reports furnished by Governments to the League of Nations on the traffic in opium and narcotic drugs provides much interesting information. There is clearly a salutary tendency to bring legislation and administration into harmony with the International Conventions of 1912, 1925, and 1931. The question of severer penalties has received attention, notably in China and the Shanghai International Settlement. In Canada it is claimed that a principal cause of the decrease of opium smoking has been the infliction of a minimum penalty of 6 months' imprisonment and a fine of 200 dollars for illegal possession of opium. Laws or regulations relating to heroin have been enacted in India and Sweden, while in Latvia the use of the drug is prohibited. The control of drug addicts has been the subject of legislation in China, Kwantung Leased Terri-

tory, and Spain. The number of addicts reported in 1935 was: in Egypt 16,957, in Japan 2,800, in the United Kingdom 700, in Italy 427, in Poland 378, in Turkey 144, in the Netherlands 41. In the United States it is claimed that "the total number of non-medical addicts has decreased and that there is now less than one addict known to the authorities per 1,000 of the population." The area under poppy cultivation in China is estimated to be about 109,654 hectares, in British India 3,346 hectares, in Turkey 25,417 hectares, in Soviet Russia 10,024 hectares, in Iran 18,860 hectares, in Japan 1,502 hectares, and in Korea 2,481 hectares. Four countries furnish information as to the revenue derived from opium. The total revenue of the Central and Provincial Governments of India derived from excise duties and licence fees in 1935 was 23,092,305 rupees (26,325,228 gold francs). In Iran the budget estimates for revenue derived from the opium monopoly in 1935 were 75,000,000 rials (14,250,000 gold francs). In Korea the opium revenue in 1935 was 433,786 yen (390,407 gold francs). In the Union of Soviet Socialist Republics the income of opium cultivators was 3,200,000 roubles in 1935. The participation of sovereign States in the three Opium Conventions of 1912, 1925, and 1931 is reported as follows: Forty-five States are parties to all three conventions, seventeen are parties to only two conventions, six to one, and three to none.

THE PROBLEM OF LEISURE

Under the auspices of the National Institute of Industrial Psychology and the British Institute of Adult Education a conference on this subject was held at Queen Mary Hall, London, on November 18. The audience, which numbered more than 500, included representatives of over 200 organizations concerned with recreational and educational facilities. Sir Wyndham Deedes, who presided, read appreciative messages from the Duke of Kent, the Archbishop of Canterbury, Viscount Sankey, and Sir John Reith. The time had come, he said, for some scientific approach to the subject. It was significant that such a great gathering should assemble to discuss how the people might more usefully spend their leisure time. The whole question of leisure was intimately connected with the questions of sound and healthy bodies, and it was significant that, on a computation made by the British Medical Association, 40 per cent. of our population needed and did not get the right kind of physical recreation. The special aspect of the problem before the meeting was a proposal to make a survey in representative districts of the facilities for leisure occupations and the extent to which they were used. This proposal was outlined by Captain Blaksley of the National Institute of Industrial Psychology, who said that last summer, when the Institute decided to turn its attention to the problems of leisure as well as to those of work, he found a marked consensus of opinion that the matter should be taken up promptly. While a good deal of useful information had been collected concerning particular groups, nothing had been published which could be called national in its handling of the problem. The proposed inquiry would serve two purposes: it would provide practical guidance for those concerned with leisure pursuits, and it would educate public opinion in the opportunities for profiting by increased leisure time. A committee to supervise the inquiry was already in process of formation. Mr. R. S. Lambert of the British Institute of Adult Education followed with references to the serious degree of apathy among large sections of the public towards the facilities available for the beneficial use of leisure. After discussion, in which Mr. Osborn (Garden Cities and Town Planning Association), Mr. Holdsworth (National Cyclists Union), Dr. Rutland (London Council of Social Service), Dr. Leon Zeitlin, and others took part, a resolution was carried unanimously, welcoming the proposed inquiry and report as a step of practical value.

THE DISEASE OF SWINEHERDS

From work recently reported by Dr. Paul Durand and his colleagues[1] it seems as if yet another addition will have to be made to the already lengthy list of diseases communicable from animals to man. As long ago as 1914 Henri Bouchet, a country doctor in Haute-Savoie, observed a peculiar disease in swineherds, to which he gave the name "pseudo-typhoid meningitis." Other workers have encountered the same disease in Switzerland and Italy and have called it by a variety of names. The present authors give a careful clinical account of the disease, and describe its successful transmission under experimental conditions to human beings. After an incubation period of two to four weeks the natural disease commences with fever, headache, and severe muscular pains. Digestive troubles appear—foul breath, green vomit, abundant fetid diarrhoea, meteorism, and sometimes rectal haemorrhage. After about four days of this preliminary typhoid state the temperature falls nearly to normal, and the patient may attempt to resume work. In a couple of days, however, it rises again, and meningeal symptoms appear. The cerebrospinal fluid is under considerable pressure and the lymphocytes usually number several hundred per c.mm. Examination of the blood reveals a polymorphonuclear leucocytosis. After three or four days the meningeal phase comes to an end and the fever falls by crisis or lysis. In some cases a non-haemorrhagic macular or maculopapular rash appears on the abdomen and inner aspect of the thighs just before the remission. Conjunctivitis is not uncommon during the typhoid phase. The disease is practically never fatal, and leaves behind it a fairly solid immunity. Under the euphemistic guise of pyrotherapy experimental inoculations were made into mental patients. Blood from a case on the fourth day of the disease was injected intramuscularly into a patient with dementia praecox. This patient developed the disease and served as the starting-point for a series of twenty-one passages. Altogether seventy-eight subjects were inoculated, some with blood, some with urine, and some with cerebrospinal fluid. The incubation period of the experimental disease was usually about twelve days and the duration about nine days. Clinically the fever and the typhoid-like symptoms were present, but

[1] P. Durand, P. Giroud, E. Larrivé, and A. Mestrallet (1937). *Arch. Inst. Pasteur Tunis*, **26**, 213 and 228.

the typical remission and the secondary meningeal phase were of less frequent occurrence. The rash and the conjunctivitis occurred in a proportion of the cases. Bacteriological and serological examinations were negative, and the fact that the blood plasma was still virulent after passage through an L_2 candle suggested that the causative agent was a filterable virus. The blood was uniformly infective during the first week of the disease; the urine became infective during the second week, and remained infective during the early stage of convalescence. The cerebrospinal fluid was sometimes infective. The virus was neutralized by serum from a patient who had recovered from the experimental disease, as well as by the serum of two patients who had suffered from the natural disease one or two years previously. The experimental evidence submitted leaves little doubt that the disease is due to a filterable virus. How the disease is transmitted from pigs to man is unknown, but it is suggested that the louse may be responsible. Case-to-case infection in man does not appear to occur, so that infection by the respiratory tract can probably be ruled out. Little seems to be known about the nature of the disease from which the pigs themselves suffer. It is said to affect young pigs of 1 to 2 months of age, to occur sometimes in epidemic form and to be characterized by convulsions and other nervous symptoms, to last about a fortnight, and to be accompanied by a very low mortality. There seems to be ample scope here for further research.

ALLERGY AND IMMUNITY IN TUBERCULOSIS

On the basis of Koch's phenomenon it had been assumed until very recently that allergy in tuberculosis represented a state of the body in which tuberculin hypersensitiveness and immunity to reinfection were always present together and were directly dependent upon each other. That the two were dissociable was first shown by Rich in 1929, and later by others, who succeeded in desensitizing animals with living avirulent bacilli. The animals lost their hypersensitiveness to subcutaneous injection of tubercle bacilli or tuberculin, but not the immunity to virulent reinfection. Other workers have succeeded in desensitizing animals with tuberculin. Pagel[1] has carried the experimental investigation of this subject a step further. Guinea-pigs were vaccinated with heat-killed tubercle bacilli. They developed a hypersensitiveness which was expressed by an immediate though not very intense reaction at the site of subsequent tuberculous infection. This immediate reaction was not always associated with protection against tuberculous infection. On the other hand, protection did occur independently of the quality of the immediate reaction—that is, without intense inflammatory response and scab formation. When one per cent. peptone broth was used as the excipient of the vaccine in the place of saline, protection was often obtained without any immediate hypersensitive reaction after infection. Animals "treated" with one per cent. peptone broth alone often showed retardation and diminution of the response at the site of infection, yet visceral tuberculosis was attenuated and in some animals even failed to develop at all. This Pagel regards as a hetero-allergic immunity reaction to tuberculous infection. That peptone broth can act in a way similar to an antigen in tuberculous animals was shown by the intracutaneous injection into them of peptone broth: the local response was quite different from that in normal animals. The inflammatory response in tuberculous animals, however, was diminished (and was identical with that in normal animals) after the animals had been treated with "calcium Sandoz." In tuberculous animals that had been treated with peptone broth previous to infection intracutaneous injection of one per cent. peptone broth produced a granulomatous lesion with giant cells after seven days. Finally, histological examination of the immediate reaction at the site of tuberculous infection in animals vaccinated as above showed evidence of fixation and destruction of the injected tubercle bacilli in the absence of increased inflammatory reaction and necrosis. These experiments conclusively prove that hypersensitiveness and immunity in tuberculosis are dissociable phenomena.

[1] *J. Path. Bact.*, 1937, **44**, 643.

ASCHHEIM-ZONDEK TEST IN THE DIAGNOSIS OF CEREBRAL TUMOURS

The fact that the Aschheim-Zondek reaction is due to gonadotropic hormones secreted by the anterior pituitary makes it not unreasonable to attempt to utilize it in cases, other than pregnancy, where the pituitary gland is suspected to be in a state of increased activity. Cerebral tumours may therefore *a priori* well be included. The investigation of the presence of gonadotropic hormone in the body fluids in such cases necessitates a technique which will detect much smaller quantities than those associated with pregnancy and a standardization of the effects. Monnier[1] has recently attempted such a standardization, using immature mice and a physiologically standardized extract of human pregnancy urine. The effects of different amounts of the gonadotropic hormone were studied in both the immature male and the female mouse. In the female the ovaries, tubes, uterus, and vagina were studied macroscopically and microscopically after injections of 1/4, 1/8, 1/16, 1/32, and 1/64 of a mouse unit as ordinarily defined, the results obtained with the first three doses being characterized as phase Ia, Ib, and Ic respectively. Since the effects of small doses were to be defined, Monnier chose as his starting-point an amount of hormone (1/4 mouse unit) well below that required for full luteinization or maturation of the follicle but sufficient to indicate an unequivocal pituitary activity. Phase Ia in the immature female mouse (resulting from 1/4 mouse unit) is characterized by enormous hypertrophy and hyperaemia of the tubes and uterus, visible macroscopically, and opening of the vagina. Microscopical study of the tissues in phase Ia showed that follicular maturation is too feeble to be used as a criterion. On the other hand, the intense hyperplasia of the tubes, the uterus, and the vagina, and the keratinization of the vaginal epithelium are unequivocal. Doses below 1/4 mouse unit do not in the immature female mouse lead to

[1] *Presse méd.*, 1937, **45**, 412.

opening of the vagina, but they show a gradually diminishing intensity of the remaining effects. Doses below 1/16 mouse unit do not give indications which can clearly be associated with gonadotropic activity. Similar gradation of effects was obtained with the immature male mouse, in which the action of the hormone on the testicle, epididymis, seminal vesicles, prostate, and penis was studied. As in the case of the female, three phases—Ia, Ib, Ic—are distinguished corresponding to 1/4, 1/8, 1/16 mouse unit. Phase Ia includes hypertrophy of the penis and intense keratinization of the glans; hypertrophy of the testes and seminal vesicles; great interstitial and epithelial hyperplasia of the testes but little effect on spermatogenesis; whilst Ib and Ic show diminishing reactions except in the matter of spermatogenesis, in which the larger dose, 1/4 mouse unit, seems less effective than 1/16 mouse unit. Using these criteria on the cerebrospinal fluid of human subjects, Monnier was able to demonstrate that normally no gonadotropic hormone can be found; in cases of intracranial hypertension very small amounts of the hormone are detectable in the cerebrospinal fluid, but always less than can be detected in the urine or blood. The same is true for the ventricular fluid. In a series of twenty cases of cerebral tumour tests were carried out on urine, blood, cerebrospinal fluid, and ventricular fluid, with the result that positive Aschheim-Zondek reactions were obtained in nine cases. The reaction seemed to be conditioned by the position of the tumour: it is frequently positive when the tumour is frontal or in the neighbourhood of the sella turcica, and especially when the tumour is basilar—that is, in the region of the thalamus or pineal gland. Parietal, temporal, and cerebellar tumours did not yield positive reactions. Of fifteen cases of various other neurological conditions, only three gave weak positive reactions. As no greater quantity of hormone was ever found in the cerebrospinal fluid than in the urine, it is sufficient in any given case to test the urine only. Whilst these results are as yet rather of academic interest, it is worth observing that the pituitary can share in the general disturbance from a cerebral tumour by exhibiting a demonstrable hyperfunction.

CORPUS STRIATUM AND MAINTENANCE OF EQUILIBRIUM

The relation of the cerebellum, the sensory system, and the labyrinth to the mechanisms of equilibrium and posture is now well recognized. Physiological and pathological studies have been directed towards elucidating the nature of the peripheral reception, both internal and external, the mode of collection and correlation of the impressions received, their transmission to the special centres, and the evolution of those motor responses resulting in a maintained balance. Much is known of the function and mode of action of the peripheral receptors in the control of posture and equilibrium. On the anatomical side a great deal of work has been directed towards tracing the conduction path from the labyrinth to the central nervous system, but this still remains undetermined. Both clinical and physiological evidence, however, leave little doubt of some intimate functional connexion between the vestibular apparatus and the anterior frontal area. Experimental research has demonstrated the importance of the mesencephalon in the reflex regulation of posture. The pathological changes in the corpus striatum and mesencephalon found in cases of post-encephalitic Parkinsonism have directed attention to the probable functional relation between the corpus striatum and the vestibular apparatus. Delmas-Marsalet, Berguignan, and Verger[1] have recently published a review of the problem and have made some important experimental and clinical observations. They destroyed parts of the corpus striatum in dogs by a special technique and studied the subsequent spontaneous behaviour of the animals as well as the effects of rotation and cocainization of the labyrinth. They found that the animal with one caudate nucleus destroyed presents a slight curvature of the neck towards the injured side and a tendency to turn towards the same side. If one lenticular nucleus is destroyed the curvature of neck and spine towards the injured side becomes very marked, and rapid circus movements towards the same side are established. After either of these lesions labyrinthine tests give rise to peculiarly dissociated reactions: thus nystagmus is normal, but posture and rotatory reactions occur with great intensity towards the operated side and are absent on the unoperated side, "as if the lesion of a *noyau strié* facilitated the rotatory reactions, spontaneous or provoked, directed towards that nucleus, and inhibited the reactions in the opposite direction." Gross disturbances of equilibrium follow bilateral lesions: thus destruction of the caudate nucleus on one side and the lenticular nucleus on the other leads to incoordination and a tendency to fall on the side. Labyrinthine tests in an animal with bilateral lesions increase the disequilibrium, but excitations of each of the labyrinths provoke perfectly symmetrical reactions of a more feeble character, however, than in the normal animal. Delmas-Marsalet and his co-workers point out that this experimental syndrome is similar to that produced by an experimental lesion of the pre-frontal lobe. Working on these lines they conclude that the pathway from the vestibular nuclei is to the lenticular nuclei spreading probably to the caudate nucleus and thence to the frontal cortex; the nystagmic reflexes are probably borne by collateral fibres given off in the mesencephalic region.

The Nobel prize for chemistry has been awarded jointly to Professor W. N. Haworth, director of the department of chemistry in the University of Birmingham, for his research on carbohydrates and vitamin C, and to Professor Paul Karrer, of Zurich, for his research on vitamins.

We regret to announce the death of Dr. Orlando Charnock Bradley, principal of the Royal (Dick) Veterinary College, Edinburgh, who was president of the Section of Comparative Medicine at the Edinburgh Meeting of the British Medical Association in 1927.

[1] *Rev. Laryng.*, April, 1937, p. 353.

LEGACIES TO MEDICAL CHARITIES

BY

HENRY ROBINSON, M.D.

Chairman of Council, Royal Medical Foundation of Epsom College

The subscription incomes of the medical charities, by which are meant especially the Royal Medical Benevolent Fund and the Royal Medical Foundation of Epsom College, are still far below what they ought to be, although the persistent efforts of the British Medical Association on their behalf have brought about improvements in this respect. In what follows, I want first to emphasize that a plea for legacies is not meant to supplant, but to supplement, the prime duty of the profession to subscribe annually.

At the Annual Meeting in Belfast last July I was able to give some statistics which I had collected by study of the wills and bequests column of the daily press, and these have now been further analysed. My investigation covered a consecutive period of exactly twelve months. I took a basic figure of £20,000, and excluded every (medical) estate below that figure. It is, of course, clear that a medical testator with no dependants or near relatives who has £10,000 to dispose of owes a much greater obligation to be charitable than one with double that amount who leaves a widow and a large family; but it is impossible to allow for factors such as this, so the base line was selected on the assumption that all members of the profession possessing property of that value can afford at least a small legacy to one of the charities of their own profession.

Before going any further I ought to make two things quite clear: first, that though the total number of the estates dealt with is surprisingly large, it contains only a small fraction of the medical practitioners who die in any one year; and, secondly, that most of the largest estates, which swell the total to imposing dimensions, have obviously and notoriously not been accumulated by successful practice, but are the results of non-professional activities or inheritance from ancestors engaged in more lucrative pursuits. All the same, in my view a qualified medical man (or woman) who is fortunate enough to inherit wealth owes as great a duty to the medical charities, both during life and as a testator, as one whose prosperity has been the result of professional success. I have included in my collection a few estates left by the widows of doctors whenever they have exceeded my datum line.

The total number of these estates noted during the twelve months was 115, with roughly a total value, before deduction of death duties, of £4,978,000. These very considerable figures certainly surprised me, and may possibly surprise others; but I do not think they can be a freak result (except perhaps by the inclusion of three six-figure estates not acquired in the practice of medicine), because the numbers per month fluctuated remarkably little right through the whole year.

It might reasonably have been anticipated that the two medical charities would have benefited very considerably from the wills of these wealthy individuals. The Royal Medical Foundation of Epsom College, however, has in prospect (for it is not yet to hand) but one legacy of £300 from among the whole lot; the Royal Medical Benevolent Fund has done rather better, with (I think) one good legacy and two or three smaller ones. But the grand total can only be described as miserable and unworthy. One per cent. would have brought in £50,000, which would have put both charities in a position to afford help worthy of a great profession.

Another distressing feature of the list is the discovery that few among the larger estate owners have ever subscribed during their lives to either of these medical charities—the cynical will say that is why they left such large fortunes, but probably the real reason is more often thoughtlessness. In one case where a medical widower left £52,000 it was discovered on inquiry that the local charities secretary had many times approached him for a subscription, and had every time been refused on the ground of insufficient means! A further anomaly is disclosed in a few of the cases where large legacies (sometimes running into several thousands) are left to all sorts of philanthropic organizations, often very deserving ones, without a thought of the claims of our own professional charities. For instance, not long ago a doctor left about £10,000 among four separate missions to the heathen; he had never subscribed to any of the medical charities. Another one, also recently, left some thousands among selected charities, and he too had never contributed to the Royal Medical Benevolent Fund or to the Royal Medical Foundation of Epsom College. A woman doctor with no dependants left an estate of £37,000, without a legacy to medical charity, although during her life she had bought and presented to the National Trust a well-known beauty spot for preservation in perpetuity. She, too, appears never to have subscribed to any medical charity during her life.

One could multiply instances of similar complete disregard of those claims which might be thought to lie very near the heart of medical testators, but perhaps I have said enough. I will add just this, that the Council of Epsom College have during the years 1936 and 1937 together sanctioned capital expenditure—in their view, and in my own view, necessary expenditure—amounting to about £17,000; and in consequence have to face an exceedingly heavy overdraft from their bankers or else to sell out investments. Either expedient will, of course, reduce the income of the Foundation; and this disadvantage could have been avoided if the testators above recorded had taken what appears to me a just view of their responsibilities. I present these statistics to the profession in the earnest hope that those who can afford to help the medical charities in this way will not forget or neglect to do so. May they live long to enjoy the sensation of knowing that their duty has been done!

R. Lévy-Dreyfus (*J. Urol. méd.-chir.*, July, 1937, p. 5) considers that intestinal fistulae rarely follow operations on the kidney. He has been able to trace only fifty-five cases in the literature. The fistula is caused either by manipulation of the kidney during operation or by the persistence of tuberculous infection or perirenal suppuration. In the cases reported tuberculosis was responsible for the largest number of cases; other causes may be lithiasis, perinephric suppuration, and neoplasms. Fistulae of the colon were most common, though there was an almost equal number of duodenal and right colic fistulae. The intestinal opening is seldom longer than 1 cm. and is often a good deal smaller. The first sign of a fistula is the escape of intestinal contents from the wound or scar, accompanied by local inflammation and fever. This usually occurs in the first few days after operation, although cases have been seen when a much longer period has elapsed, and one instance is noted where a fistula of the colon was not observed until ten years after the removal of a tuberculous kidney, though a sinus had persisted since the operation. Fistulae of the colon tend to heal spontaneously and rapidly in about 65 per cent. of cases, with a gradual decrease of intestinal discharge. Surgical treatment may be necessary for those cases in which the fistula does not heal. When the perforation is in the colon an entero-anastomosis followed by a colectomy is the procedure of choice. The prognosis in cases of duodenal fistulae is more serious, and operative treatment carries such a high mortality that medical measures should first be tried. The most simple form consists in keeping the patient in the ventral or lateral decubitus for a long period, with the reduction of fluids by the mouth.

"HUXLEY, THE BRAIN, AND THE MIND"

PROFESSOR ADRIAN'S HUXLEY LECTURE

The Huxley Lecture at Charing Cross Hospital Medical School was delivered on November 18 by Professor E. D. ADRIAN, M.D., F.R.S., of Cambridge, who gave it the title of "Huxley, the Brain, and the Mind."

It was ninety-five years ago, said Professor Adrian, that Thomas Henry Huxley entered that hospital as a medical student, after having served for a year as an assistant to Dr. Chandler in Rotherhithe. In those days medical studies were taken in an inverted order or in no order at all, for Huxley began in the surgery of a slum practice, and then went on to chemistry, physiology, and anatomy at Charing Cross. He took his M.B. after three years, became a surgeon in the Royal Navy, and was appointed to a frigate which was to serve in East Indian and Australian waters. But on that frigate he found his abiding interest in zoology and was lost to medicine.

Clinical Research in Neurology

A lecture which commemorated Huxley to medical students could hardly avoid reviewing the advances which had been made since Huxley was at Charing Cross. As a physiologist the lecturer supposed that he ought to begin by celebrating the successful invasion of that science into medical teaching and practice. But he was not sure that the invasion had not been almost too successful, for there was some danger that physiology, having penetrated into the realm of zoology on the one side and of medicine on the other, would become absorbed in the vast territories it had conquered and would cease to exist as an independent science. For its offspring biochemistry the danger was not so immediate, though the biochemist had already made himself so indispensable to medicine that it might soon become difficult for him to follow his own devices. How this situation would develop no one could foretell, and it was not really known how it ought to develop, but a balance should be struck between the academic and the practical. There was one branch of science in which the two fields of interest had always blended. In neurology true clinical research from Huxley's time onwards had had the closest possible relation to experimental physiology, and progress had been due to hospital wards and laboratories alternately. For this reason the lecturer proposed a discussion on the present lines of advance in knowledge of the nervous system.

After mentioning certain more academic branches of neurology in which there had been steady progress with no sign of unusual difficulties ahead, Professor Adrian said that all the evidence went to show that there was no reason to suppose the cell units of the nervous system to differ greatly from excitable cells elsewhere. They were less stable, no doubt, and their reactions less stereotyped, but the mechanism of excitation and conduction was the same in them as in the muscle fibre. The special properties of the central nervous system must be due to the special way in which its units were organized. Up to a point the organization of the units was no more difficult to understand than their individual reactions, thanks to Sherrington's analysis of the reflexes; but the difficulties of analysis were of a different order on passing to higher levels of the nervous system and more fully integrated behaviour.

The Labour Organization of the Brain

No detailed anatomical basis for memories and intelligent actions was available. The "factory" which produced the materials of consciousness was not made up of a vast number of independent sections which turned out a particular product. There was a less degree of organization and a high degree of elasticity, so that minor accidents had little effect; on the other hand, a major breakdown in any department might affect the efficiency of the whole concern.

The labour organization of the brain was illustrated by another set of facts relating to the changes in the general level of cerebral and mental activity. As Head had shown, a loss of function due to destruction of the cortex was not a constant quantity, but depended on factors which could change rapidly and were related to emotional tension and alertness. The normal fluctuations in the efficiency of behaviour seemed to depend on general factors of this kind.

The parts played by cortex, thalamus, and hypothalamus in the change from sleep to waking or from anger to happiness were very far from being understood. At present it was not known what change took place in the brain when something was learned, and it was important to realize the lack of knowledge in these respects. All that could be said was that the cerebral cortex did not make up the whole of the mechanism for intelligent behaviour, and that the level of activity in any region might depend on interactions which included the more primitive regions as well. Indeed, everything pointed away from an analysis of behaviour in terms of isolated reflexes and association systems, and the idea must be faced that the whole brain co-operated in any of its activities, although it was not known what kind of mechanism was brought into play.

Far from this being a confession of failure, it meant that cerebral physiology was now facing its most important problem, and it was facing it armed with new methods of all kinds. But the change in physiological outlook was noteworthy for another reason, because it corresponded in a measure with the change in psychological outlook which had come about since Huxley's death. The change could be seen most clearly in comparing a modern textbook of psychiatry with one written fifty years ago. In those early days psychiatry tried to advance, much as neurology was trying, by setting up hypothetical schemes of mental disorder and then forcing the symptoms to fit. The key points of this scheme were not different cortical centres, but the faculties of cognition, emotion, and volition; it seemed reasonable to analyse the disorders of the mind in terms of these faculties much as disorders of speech were to be analysed in terms of word centres in the cerebrum. The attempt broke down in face of the bewildering variety of mental symptoms.

The Freudian Conception

On the theoretical side the greatest change had come with the general acceptance of the idea that conscious behaviour was guided by a balance of unconscious forces and would be impossible without them. For this Freud was mainly responsible. The lecturer recalled the puzzled excitement with which Freud's theories were discussed by the medical students at Cambridge before the war. The central idea then seemed as unlikely as was the detailed analysis of dreams and trains of thought. Nowadays the central idea appeared to be too obvious to discuss, and whatever might be thought of the details of psycho-analysis, disorders of the mind could scarcely be considered without making some use of the Freudian conception.

No doubt this change had been assisted by the natural shift of emphasis as one generation succeeded another. There had been other formulations of the same position, less challenging than Freud's. Pavlov's work on conditioned reflexes, though it had little to do with psychology, had been far more important in one country in changing the popular conception of the mind.

But whatever its causes, the change had had far-reaching effects, more on social behaviour generally than on the specialized activities of neurologists and psychiatrists, for there was more to change in the layman's point of view. It had altered the relation between parents and children, and made people less sure of themselves. "We are less shocked than we might have been at the idea of developing beliefs and loyalties by State propaganda, more ready to accept the challenge that our scientific deduc-

tions will depend on whether we were bred capitalist or communist, Aryan or non-Aryan. There is nothing new in the idea that reason is not the main guide of human behaviour, but nowadays we have to consider it as a scientific statement, not merely as a satirist's invention to shame us into good behaviour."

This change of outlook favoured Huxley's general conception of brain and mind. It was true that the Freudian mechanism was a psychological, not a neural affair, but advancing knowledge of cerebral and mental organization seemed to be leading neurologists and psychologists towards a common ground. Both were concerned with the driving forces, whether they were the incentives to intelligent action or physical and chemical factors, which controlled the level of activity in the cortical networks, and both had new methods of attack of great promise. Although the neural basis for the simplest intelligent action was not yet certain, a period of rapid progress in cerebral physiology was probably beginning, and certainly an understanding of the psychological factors which controlled behaviour was being approached.

Practical Results

As to what practical results had followed from this increasing knowledge, no one doubted that disorders of the nervous system were better understood and treated than in Huxley's time, though there had been no success as yet with disseminated sclerosis and some of the slow degenerations. With the psychoneuroses there was certainly more understanding, though it was hard to avoid the impression that there was also more disease. In the major disorders of the mind there had been relative failure. There were some new empirical treatments with a limited success, and in some cases the prognosis could be given with greater certainty; but it must be admitted that an increased understanding of the insane personality had not yet done much to restore it to sanity—so at least it appeared to an onlooker. This failure was to be regretted, but it was not surprising. The advance had been mainly on the psychological side, and psychological lines of treatment only could be suggested. For the psychoneuroses these might be enough, but in the psychoses the patient had become inaccessible to such treatment because his thought had ceased to run along the customary lines. To restore it would seem to require treatment of the bodily changes which must certainly occur when the mind became incapable of bearing its normal burden.

Professor Adrian added that no one need hope for the time when the medical experts would be required to deal with all conduct which was thought by the ruling classes to be anti-social. There would be quite enough to decide if they were called to breed out abnormalities and obtain a standardized race. But it was none the less a logical outcome of Huxley's creed that the biologist should become an expert on human as well as animal behaviour. The biologist was still too ignorant to suggest many improvements in the accepted methods by which society controlled its members, though lately they had been bold enough to assert that hungry men were often discontented and that prison did not always induce repentance. That was perhaps enough at the present stage.

Huxley spoke somewhere of biological science as providing an antidote to that phase of despair which the student, if he took an earnest interest in social problems, would assuredly sooner or later enter. The lecturer supposed an occasional phase of despair over the suffering of mankind was still a valuable part of medical training. Nowadays not so much comfort could be extracted from the doctrine of evolution or of the survival of the fittest, but compensations were not lacking. One of these was the knowledge that medical and biological research since Huxley's time had greatly lessened pain and disease; another was the more ambitious belief that by research on the brain and on the mind it would be possible eventually to understand and control the forces which determined human behaviour

SOCIETY OF MEDICAL OFFICERS OF HEALTH

THE ANNUAL DINNER

The Society of Medical Officers of Health held its annual dinner at the Piccadilly Hotel on November 18, with the president, Dr. JAMES FENTON, in the chair. Among the principal guests were:

Sir Comyns Berkeley (Chairman of the Central Midwives Board), Viscount Dawson of Penn (President of the Royal College of Physicians), Captain G. S. Elliston, M.P., Lord Horder, Sir Kaye Le Fleming (Chairman of Council, British Medical Association), the Earl of Limerick, Mr. Hugh Lett (Master of the Society of Apothecaries), Sir Ewen Maclean (President, British College of Obstetricians and Gynaecologists), Sir John Parsons (President, Royal Society of Medicine), Sir Allan Powell (Mayor of Kensington), and Lord Snell (Chairman of the London County Council).

Mr. R. H. BERNAYS, M.P. (Parliamentary Secretary, Ministry of Health), proposing the toast of "The Society," said that it was largely to the medical officers of health that the country owed the splendid public services now available for the prevention and cure of disease. In many areas, especially rural, full advantage was not taken of the services, and the Ministry was at present concerned with securing a better use of existing facilities. There were hundreds if not thousands of pregnant women at the present moment who had not sought, and did not realize why they should seek, medical care before their confinement. He added that he was sure the local health arrangements were at their best and most fruitful when there was full and friendly co-operation between the local authorities as represented by their medical officers of health and the general practitioners of the area. The national health campaign was the beginning and not the end of the matter, for health education must be continuous if it was to be successful. He had been specially instructed by the Minister (Sir Kingsley Wood) to invite the individual co-operation of all in the medical profession in the health campaign and to express his gratitude for what had already been done.

Dr. JAMES FENTON, in responding, said that medical officers of health were grateful to private practitioners for the spirit of co-operation they had shown in the campaign. The maternity and child welfare, tuberculosis, and other services were now firmly established, and the outstanding problem was to teach people to take the fullest advantage of them. He went on to suggest that the municipal hospitals should be made use of for research into the causes and prevention of the two maladies which took a heavy toll of life, health, and comfort, and the origins of which were still obscure—namely, cancer and rheumatism—but he agreed that hospital research was not enough; it must in some way be combined with research among the general body of the people in their homes and work-places. He reminded the gathering that those who had gone before them had not been afraid to tackle difficulties, and by their labours they had enabled the present generation to prevent what seemed in their day as unpreventable as cancer in our own. How would posterity look upon us if we did no more than polish the monuments chiselled by our forefathers?

The Positive Element in Health

Captain G. S. ELLISTON, M.P., proposed the health of the guests in a comprehensive speech, coupling the toast with the names of Lord Horder and Lord Snell.

Lord HORDER said that it was necessary to concentrate upon the positive element in health rather than on the negative absence of disease. This was of fundamental importance to-day, not only in the work of medical officers of health and general practitioners, but in that of consultants and specialists. This positive element was

influencing their work more and more, alike those who worked in the sphere of public health and those who practised individual medicine. In this reorientation they all came nearer together, as witness the present drive for national health in which both sections united. The efforts of the medical officer of health and of the family doctor were both necessary, and they should pull together. He had been impressed by the manner in which medical officers of health were specializing upon certain aspects of their work; for example, one would concentrate upon ventilation, another upon accident prevention, and another upon the important subject of food. By reason of their specialization, not only medical officers of health but the medical profession in general was making an enormous contribution to national fitness. The present campaign dealt more with biology and less with pathology, but health services as such could not be "got across" without the help of the family doctor.

Lord SNELL paid a tribute to the medical staffs of the administrative authorities of the country. Those authorities, he said, did not regard their medical staffs as paid officials, but as partners in carrying out the policy decided upon. In his view the authorities had a duty towards doctors in equal measure to the duty of the doctors towards the authorities, for the work of medical officers of health in such matters as tuberculosis and the effect of slum conditions upon health generally was altogether beyond praise, and an authority which ignored their advice would be gambling with the health of the people. When an epidemic came the weight of criticism fell on the medical officer, and yet it might be that this had happened because the advice of the medical officer had not been followed. In spite of the great strides of preventive medicine we were in some respects still behind. The vermin-infested and fever-stricken areas in great cities must be abolished, the smoke nuisance must be abated, and the great problem of noise remained still to be tackled.

Reports of Societies

PSYCHOLOGICAL APPROACH TO RHEUMATISM

In the Section of Physical Medicine of the Royal Society of Medicine on November 19, with Dr. F. D. HOWITT in the chair, a discussion took place on "The Psychological Approach to Rheumatism."

Dr. J. L. HALLIDAY said that medical science had so far proved ineffective in the disorders labelled with such terms as gastritis, peptic ulcer, chronic bronchitis, and rheumatism. What was an ill person? A useful working definition was "A person who is not himself." In the absence of the psychological approach the range of observation might be too narrow, and the deductions therefore inadequate. In considering the cause of illness it was necessary to bear in mind the kind of person, the nature of his environment, and the mechanism of his illness. The psychological factors in environment included those happenings which frustrated instinctive drives, such as the deep-seated tendencies towards self-preservation. When these drives were frustrated emotion resulted, and if the emotional reaction was maintained illness might well arise, physiological mechanisms being concerned in emotion.

Applying these considerations to non-arthritic rheumatism—to which he limited himself—Dr. Halliday said that his observations concerned patients labelled "rheumatic" who complained of pain and stiffness, but presented no evidence of obvious structural change. Their modes of behaviour would have been labelled more accurately as psychoneurotic—anxiety states and hysteria. Patients who developed rheumatism in the course of emotional reaction tended to date the onset of their illness to the time when the rheumatic symptoms first appeared. Their preceding disturbances might have been very definite and severe, and have included mental symptoms, but their consciousness was dominated by their rheumatism. During physical examination attention should always be paid to the patient's face and manner. The facial expressions which gave the hint that the illness might have emerged from emotional reaction belonged to one of two groups—the anxious and the cheerfully detached. The first might be described as strained, tired, hunted, or worried, and the appearance was often associated with tachycardia or visceroptosis. The "detached face" might be wistful, complacent, smiling, or even spiritual, and this was sometimes associated with a marked thudding of the aorta in the epigastrium.

Much could be learned by preliminary questions. Of particular interest were the patients who protested too much, and repeated such phrases as "I was never one to give in." These often complained of stiffness of the head or back. The person who developed rheumatism as an emergent from emotional reaction might be of either sex and any age, though the maximum age distribution of onset was 35–45. The history of previous illnesses was important. Many of these patients had on previous occasions responded to like stresses by illness which emerged from emotional reaction. An inventory of these illnesses included such terms as anaemia, headache, recurring colds, nervous breakdown. Certain occupations seemed more liable than others to psychoneurotic illness: in males, miners, workers at heights, and clergymen; in females, typists, housekeepers, cleaners, and piece workers; in both sexes, teachers, canvassers, travelling agents who worked on commission, and persons in sheltered clerical occupations in which the instinct of creation was continuously thwarted.

Psychological Mechanisms

In rheumatism emerging from emotional reaction a common psychological factor was the loss of a loved object, whether person, career, or money. Dr. Halliday went on to draw attention to a few simple psychological mechanisms. Inherited patterns of behaviour might play a part in determining the nature of a person's reaction. There was a common belief that one family tended to be "chesty," another to be highly strung, a third to have weak stomachs. Another factor was acquired bodily inferiority. During emotional reaction pains and other symptoms tended to be located in parts of the body which had been affected previously by operation, injury, or disease. Yet another factor was fears and knowledge of disease. It was not uncommon for a medical student or nurse to go to the teacher and express the fear of having developed some illness of a serious nature; usually this happened during an anxious time just before an examination. A little knowledge of medicine might be highly dangerous to health. Health lectures, newspaper articles on disease, magazines devoted to the body, and medical dictionaries were part of the everyday environment, and by these means the instinct of bodily preservation was constantly being tickled. As a result, when a person developed an emotional reaction he might accept from what he had heard about disease the idea that he was the victim of a grave illness, and the nature of the illness so selected might determine in part his bodily symptoms. Of deeper importance was the mechanism known as identification—the tendency of a person to behave in the same way as those around him. A good example was the morning sickness of a young husband when his wife was pregnant for the first time. Pains diagnosed as rheumatic sometimes developed in this way. The examination of any patient with rheumatism was incomplete, and the inferences made might be misleading, if the investigation was not directed to the illness or death of a loved person. Still another mechanism was symbolism—a symbol being

anything which stood for a mental experience. Symptoms often called rheumatic might be symbols of deep-seated emotional attitudes.

The psychological approach, Dr. Halliday concluded, was neither muddle-headed nor mystic, but scientific and practical. Its employment meant that a sense of proportion and perspective was achieved. By the use of a simple psychological technique observations might be made which were relevant to the aetiology, treatment, and prevention of much incapacity and illness which was labelled in practice and in statistics under the comprehensive term "non-arthritic rheumatism." This would not be believed or accepted until students of rheumatism made the necessary effort to become acquainted with such technique and applied it for themselves in daily practice.

Psychological Background of Organic Disability

Dr. R. G. GORDON said that Dr. Halliday had spoken of cases which were not properly those of rheumatism at all, but should have been diagnosed as hysteria or other form of psychoneurosis. He himself proposed to speak about the psychological approach to those patients who actually had rheumatic disease. Unless the psychological factors which might be concerned in the history of these patients were kept in mind there would be no real success in curing or understanding the condition. Many people suffered from a certain degree of organic disease which they used in order to achieve an object, often very satisfactorily from their point of view because nobody could deny that the disease was present. An obvious example was afforded by compensation cases, in which a man naturally tended to cling to his compensation so long as he was uncertain of his earning capacity. Disappointment in love was another example. The rheumatic disease or other trouble tended to persist until the individual was persuaded to make some readjustment to life. A most common group of rheumatic cases were in people of middle or even late middle life who had some chronic condition and used this to excuse further effort or to obtain sympathy from their friends. He instanced the hunting man who had a mild osteo-arthritis of the hip, was persuaded that he was never going to hunt again, and went limping and groaning around the health resorts. It required a skilled and persuasive physician with psychological knowledge to get such persons out of that condition. The temptation to tell the patient that he had got some disease with a high-sounding name seemed to beset some members of the profession, and to yield to it was not very creditable. It was equally wrong to suppose the pain to be imaginary. The effect of the emotional stress was to sensitize the thalamic centres where pain was felt. The cortical control over these centres was diverted by the emotional condition, and a neural habit was formed in which the pain became habitual and was a real pain to the patient. What had to be done was to remove the fibrositis which might be the original cause, but the main part was to desensitize the thalamic centres by straightening out the emotional condition, and in such cases wise, though it might be very simple, psychotherapy was enormously effective. Dr. Gordon emphasized that it did not follow that the physical side should be neglected. Attention to the physical side might be a means of gaining the patient's confidence, so that what the psychologist called "transference" took place.

In many conditions of illness (Dr. Gordon added) the soil on which the illness developed was psychogenic. The valuable work of the old physicians who paid such attention to the soil was apt to be forgotten. In a case of rheumatoid arthritis, for example, the immediate past history might reveal a bereavement or a fright, as a result of which there was produced the soil wherein the organism found lodging. It might, further, induce autonomic changes, and the balance of the endocrine organs might be upset. All these cases required treatment, but it was a wise physician who, in establishing treatment, could take every aspect of his patient into account, and sometimes confess his own inability to carry out treatment effectively. The spa physician might discharge a useful function in these cases, studying and sorting out the factors, and sending the patient back to the experts, who would carry out the necessary treatment.

Dr. S. D. MITCHELL related particulars of an examination carried out by Dr. Philip Ellman and himself into forty cases of rheumatoid arthritis and forty cases of osteo-arthritis in which the personal factors relating to the history and behaviour of each individual were studied. The results, which had been already published, showed, among other things, a high percentage of morbid anxiety among the rheumatoid arthritics. Dr. KERR PRINGLE pointed out one disadvantage of institutional treatment—that these people got together, and by talking over their symptoms magnified them. Dr. F. D. HOWITT said that many doctors were too much inclined to pigeon-hole their rheumatic cases and apply treatment according to categories rather than according to the merits of each case. It was well known in treating a primary atrophic type of rheumatism how largely emotional factors and home environment entered into causation and prevented recovery.

MATERNITY WORK IN L.C.C. HOSPITALS

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on November 19, Dr. LETITIA FAIRFIELD presented a survey of maternity work in London County Council Hospitals during the years 1931 to 1936.

Dr. Fairfield pointed out that the conditions in the municipal hospitals were of interest, as an increasing proportion of the midwifery of the county was conducted within their walls. Of the 58,130 births in London last year 18,261 took place in L.C.C. hospitals. The number of beds had increased during the period from 600 to 853, while the maternity units had been reduced from twenty-six to twenty-two. The optimum size of unit was now considered to be from eighty to ninety beds. Of the women confined, 46.5 per cent. were primiparae; 8.7 per cent. were unmarried. Although no compulsion could be exercised, 90.88 per cent. attended the Council's ante-natal clinics. The rate for aided or complicated labours remained steadily at about 16 per cent. The stillbirth rate was 3.8 per cent., and the death rate of infants within the first ten days of life 1.9 per cent. Caesarean sections constituted 0.85 per cent. of the deliveries; the forceps rate was steadily between 3.25 and 3.39 per cent.; the surgical induction rate was 2.47 per cent. (mainly owing to the practice of one or two hospitals).

Puerperal Sepsis

It was difficult to secure really comparable figures for the maternal mortality rate. The deaths from truly obstetric causes after the twenty-eighth week were presented separately. The total had been 292 out of 79,254 confinements; the rate had fallen by 50 per cent. between 1931 and 1936, and was at least 20 per cent. lower for 1937. Puerperal sepsis, with ninety-five deaths, was the major problem. Cases of sepsis from the hospital standpoint fell into four groups: autogenous, epidemic, sporadic cases after normal labour, and sporadic cases after abnormal labour. Only the last group now contributed to the Council's death rate. Two factors had revolutionized the outlook for such cases. The first was the intensive work of Dr. Leonard Colebrook and his colleagues in regard to the haemolytic streptococcus, and the second the discovery of prontosil, though this latter advance came too late to influence favourably the statistics she was presenting. Only three patients had been lost from infection since prontosil was used, and of these two had been infected before coming into hospital and were seriously ill on arrival. She insisted that it was possible to concen-

trate too much on the hunt for the organism, with a comparative neglect of other dangers. Eclampsia was the commonest cause of toxaemic death. Of 110 cases of eclampsia thirty-four came from L.C.C. clinics, and six of them died. In the other seventy-six emergencies there were fourteen deaths.

The fact that 30.4 per cent. of the cases of albuminuria had haemorrhages showed that this complication was bound up with the prevention of toxaemia. During the six years under review no woman who had attended the L.C.C. ante-natal clinics had died of accidental haemorrhage. In 375 cases of placenta praevia seven were lost directly from haemorrhage and three from sepsis. As to obstetric shock, cases which came in after having had outside interference constituted a tragic series of mismanaged labours. In regard to anaesthesia, little chloroform was given, but personally Dr. Fairfield was not as scared of it as were others. Out of 781 Caesarean sections there were four deaths following spinal anaesthesia, but no deaths from any other kind of anaesthetic.

General Discussion

Professor MUNRO KERR submitted that no proper comparison was possible between the L.C.C. figures and those of maternity hospitals in the provinces; in the latter from 20 to 40 per cent. were emergency cases, as against 10 per cent. of the L.C.C. cases not previously booked for delivery at hospital. The L.C.C. reduction in maternal mortality had been most striking in the cases other than those due to sepsis. He objected to the frequently repeated statement that auto-infection was only of minor importance; in two series of cases at Aberdeen localized infection in or on the patient's person was responsible for 30 per cent. of the fatalities. It should be possible almost to eliminate extrinsic infection by the use of masks, gloves, isolation of infected patients, restriction of visitors to patients, and limitation of the number of patients in each ward. Professor JAMES YOUNG remarked that in all the series of figures sepsis was the most important factor in maternal mortality. It could still be argued with some force that one of the most important risks run by women who entered maternity hospitals was that of puerperal sepsis; ten years ago that risk was considered to be six times as great as when the woman was delivered in her own home. In sepsis the great problem was that of the carrier; a second problem was that of toxaemia, and the L.C.C. hospitals had been remarkably successful in safeguarding against the major risks of fulminating toxaemia.

Dr. W. H. F. OXLEY said that Dr. Fairfield had rightly stressed the importance of an immediate swabbing of the cervix and a bacteriological examination in any patient showing a rise of temperature, because the presence of the haemolytic streptococcus constituted a more serious problem than that presented by the staphylococcus or the *B. coli* group. Dr. ARNOLD WALKER gave a short account of his work at Willesden, where there were 2,900 births in a year, one-third of the number taking place in the Willesden Maternity Hospital. The stillbirth rate was under 3 per cent., the infant death rate 1.8 per cent. In all the booked cases in the year there had been only five maternal deaths, and only two cases were proved to be infected with haemolytic streptococci.

In further discussion Professor MILES PHILLIPS (the president) considered that Dr. Fairfield's contribution constituted a good plea for the institutional care of cases of labour. Professor C. G. LOWRY of Belfast considered that fifty years hence no woman would be delivered in her own home unless her case was one of really precipitate labour and there was no time to transfer her to an institution. The overstressing of the dangers of employing forceps was sometimes responsible for an unnecessary prolongation of the woman's sufferings. Mr. EARDLEY HOLLAND emphasized the present-day safety of women who were delivered in a first-class maternity hospital in preference to their own homes.

PLASTIC SURGERY

At a meeting of the Devon and Exeter Medico-Chirurgical Society on October 28 Sir HAROLD GILLIES gave an address on the scope and developments of plastic surgery.

Sir Harold discussed his subject under three main headings: (1) scarring from minor injuries, treatment of naevi, etc.; (2) conditions necessitating major operations; and (3) recent operations undertaken for the remedy of deformities resulting from paralysis of the facial nerve. The first two parts were illustrated on the screen, and the third by the cinematograph. He dwelt upon the frequency of motor accident injuries, and the care that must be taken to avoid disfigurement. This was by no means always possible, although the importance of the early and efficient primary suture could not be overemphasized. He had had experience of cases requiring treatment for the bites of various animals, including the dog, lion, and horse—that from the last-named being especially injurious. He had seen dog bites of both the nose and lip, and in one of the former the tip of the nose had been immediately recovered and replaced. In another more severe instance it had been necessary to rebuild the nose anteriorly by means of a flap turned down from the forehead and folded into the nostrils; healing took place in three weeks. In a cut from broken glass involving the bridge of the nose a portion, including a minute slice of cartilage, had been recovered and sutured into place about ten hours after the receipt of the injury. In the repair of the eyelids he often had to obtain tissue from the ear, but where feasible the opposite eyelid offered the best possible material. In petrol burns causing ectropion thick razor-grafts were indicated, and where the eye socket was injured, especially by caustics, he advocated the complete removal of mucous membrane and repair with skin. In a case of serious disfigurement resulting from a burn on the parieto-frontal aspect of the scalp he showed how it had been found possible to rotate the scalp, and by bringing it forward allow complete adaptation to the raw surface, which represented the area of the excised scar.

Bony Injuries of the Face

The lecturer, touching upon bony injuries of the face, mentioned the frequency with which displacements of the internal extremity of the malar bone escaped notice. Diplopia might be present and difficulty in opening the mouth, and irregularity of the orbital ridge was often evident; *x*-ray examination would reveal contraction of the antral cavity. Reduction was best effected by means of a lever inserted along the deep temporal fascia from above. Fracture of the nasal bones often escaped notice at the time of the injury and became apparent later, either on subsidence of the overlying haematoma or on *x*-ray examination. For reduction of the displacement a general anaesthetic was advisable, and Ash's forceps had proved most effective. In such cases he was not content until he had satisfied himself that he could reproduce the reverse deformity before replacing the bones in their normal position.

He showed two cases of hairy mole on the face, one of these bilateral and extensive, giving a leonine appearance. He had found that a graft was worth trying in these cases—a rotation flap wherever indicated. He deprecated the use of carbon-dioxide snow except in the treatment of small capillary naevi of the face; he had experienced considerable difficulties in cases in which unsuccessful attempts to treat naevi had been made previously with snow or with caustics. In the removal and subsequent repair of an ulcer of the face and lip which had become carcinomatous it had been found necessary to approximate the lips by suture as a stage in the remoulding by grafts. Illustrations of repair of a large naevus on the right side of the face by a pectoral flap were also shown. For the treatment of a cavernous naevus he strongly advocated radium needles at the earliest

moment, without any other radical treatment. An extensive cavernous naevus of the nose, eyebrows, and lips had necessitated, after radium treatment, upper and lower pedicle grafts, together with inclusion of various "borrowed" bits of cartilage.

Sir Harold Gillies stressed the importance of recognizing the improvement in mental attitude that was coincident with the disappearance of disfigurement. A girl who had suffered the loss of the scalp in a factory accident, and for whom repair had been effected by a double pedicle graft—from abdomen to arm and then from arm to forehead—was enabled to wear a toupée, which gave her a normal appearance; she had subsequently married. Similar grafting had proved effective after excision of deep scarring of the face secondary to burns. Amputation of a lower extremity had been rendered unnecessary in the case of a middle-aged woman, the victim of a severe motor-car accident, by effecting a very difficult repair with a pedicle flap from the abdomen. In the case of a severe *x*-ray dermatitis affecting the arm of a radiologist excision of the diseased area had been the means not only of removing pain but also of restoring useful function to the limb.

Buccal Deformities

In dealing with buccal conditions skin grafts maintained in position by pressure moulds of the cavity gave excellent results, and it was surprising to note the rapidity with which healing took place. An appropriate and exact moulding of dentures was a *sine qua non* when repairs to the mouth and chin were undertaken. In syphilis there had seemed to be reluctance to attempt to correct deformities in the past, but once the disease had responded to specific treatment he saw no reason for such reluctance.

Syphilitic ulceration destroyed the mucous membrane of the nose, and so skin grafting was required for lining the nares; in addition, bone grafting and a suitable dental appliance had done much to improve the appearance in certain cases.

Sir Harold gave a short account of the modern developments in the treatment of congenital malformations—for instance, hare-lip, where the muscles were now united in separate layers and building carried out in stages without hurry. Allusion was made also to Abbé's operation for repair of double hare-lip. He discussed the difficulties associated with hypospadias and other congenital defects of the penis and urethra. In one such case he had removed the umbilicus and grafted it on to the tip of the penis, thereby reproducing at one and the same time a normal appearance and a patent urethral opening. In congenital webbing of the fingers "pressure" skin grafting had proved satisfactory. In flattening connected with frontal sinus defects and in hemiatrophy of the face flat grafts had given perfect results. The best grafts for this purpose were obtained from the abdomen, in particular the right iliac fossa.

He mentioned the difficulties met with in treating congenital absence of the ear; at the moment six out of ten cases, in which he had obtained cartilage from the mother, had given very good results. The chief difficulty was with the construction of the upper part of the ear.

Deformities due to Facial Paresis

Sir Harold Gillies ended his address with a cinematograph demonstration of his operation for correcting the deformity resulting from unilateral facial paralysis. The first step in the operation was the acquisition of strips of fascia lata and their accurate division in length and breadth. Next followed the subcutaneous insertion of appropriate strips in circular fashion through the musculature of both lips. A similar fascial graft was then attached to a slip of innervated temporal muscle, obtained by inversion and brought down over the zygoma. The free end of the lower fascial strip was brought up subcutaneously and tied to the temporal slip in the small wound below the zygoma—a trifling scar alone being visible after the closure. As an immediate result of this operation biting was practically normal, smiling and whistling brought out no harsh asymmetry of the face and lips, and emotional responses—extreme hilarity—showed only 50 per cent. of the pre-operative deformity.

ORGAN INFERIORITY

At a meeting of the Medical Society of Individual Psychology on November 11, Dr. CUTHBERT DUKES read a paper on organ inferiority, this being the second of four papers forming a symposium on the contribution of the late Alfred Adler to psychological medicine.

In his introductory remarks Dr. Dukes explained that his paper was short and intended to be provocative of discussion. Adler's *Study of Organ Inferiority and its Psychical Compensation*, published in 1907, marked the beginning of his career as a psychologist, and might be said to have laid the foundation of individual psychology. The book dealt with two subjects. The first and simplest was the influence of an inferiority or defect in an organ as a determinant of disease. For example, tuberculosis was more likely to develop in a defective than in a normal organ, and Adler argued that when we could find no other explanation for such a localized lesion as renal tuberculosis we might assume that the kidney itself was inferior. Dr. Dukes criticized Adler's statement that such an inferiority might be of a fundamental character, affecting the whole urinary tract, and might manifest itself in one patient by a structural deformity; in another as renal tuberculosis, calculus, or tumour; and in another as some such functional difficulty as enuresis. He challenged Adler's statement that there might also be segmental inferiorities, and inferiorities dependent on groups of physical characters, affecting wide areas of the body, and leading to defects in the height, size, or weight of the whole body. He had never come across much evidence for an inferior state of a whole organ, system, or segment of the body, manifesting itself in different but related ways in different members of one family. But he was a firm believer in the inheritance, and therefore in the familial distribution, of a defect or inferiority of one particular organ. The example of which he had had most experience was intestinal polyposis or multiple adenomata of the large intestine. This was obviously an inherited organ inferiority. The small tumours usually appeared in childhood and were at first benign, but early in adult life carcinoma of the colon or rectum was a probability. Here was an example of an organ inferiority acting as a determining agent in disease, and recent cancer research had brought to light similar examples of inferior organs predisposing to malignant disease in animals. By inbreeding it was possible to rear strains of mice with such hereditary predisposition to cancer of the liver or to cancer of the mammary gland. Thirty years ago Adler said: "It is the inferiority of the organ and not the cancer which is inherited."

Psychological Effects

The second and larger subject with which the book dealt was the effect of organ inferiorities on the psychological development of a child. An inferior organ might become the centre of attention of the developing personality, and the whole plan of life might be arranged to disguise, to counterbalance, or to compensate for the deficiency. Examples were given of the effects of such an inferiority as a defect of speech. This might lead to great concentration either to overcome or to conceal the defect, so that the afflicted individual might become an orator, or a stammerer, or a recluse. Thus, it was not the gravity of the disease but the child's personal attitude to it which was psychologically important. A serious disease might have no special importance so far as mental development was concerned. A slight defect, harmless in itself but troublesome or deforming, might severely shake the courage and

self-confidence of a child. Organ inferiorities might become the stimulus to higher development or the determinants in the choice of careers. These studies in organ inferiorities and their psychical compensations led Adler to the study of the origin and consequence of feelings of inferiority.

Dr. Dukes was not satisfied with the use of the word "inferiority" as applied either to the body or to the mind. He warned against hasty assumptions with regard to inferiorities and supposed compensations, and gave examples. He spoke of the absence of "controls" in Dr. Adler's theories. The value of Adler's work lay in the teaching that physical ills and defects were not necessarily injurious, but might be of value to the sufferer.

CLINICAL VALUE OF THE TOMOGRAPH

At a meeting of the Section of Medicine of the Royal Society of Medicine on November 23, Dr. H. LETHEBY TIDY presiding, the subject of discussion was the clinical value of the tomograph. Tomography is the "sectioning" of an organ or part by *x* rays, so that it becomes possible by successive images to analyse the subject in slices and then to give synthesized reproduction of the structure; other terms such as "planography," "stratography," and "laminography" are also current.

Dr. J. B. MCDOUGALL discussed the value of the tomograph in the elucidation of chest conditions, particularly pulmonary tuberculosis. There was no department of medicine which owed more to radiology than that which had to do with diseases of the chest. The *x*-ray film could convey much more than any individual sign or group of signs could discover. But the radiologist would agree that the usual antero-posterior, lateral, or oblique *x*-ray view left out much detail. At a time when the surgeon had come into the field of chest diseases, accuracy in localizing cavities, for example, and in determining the pathology of any lesion was ever more imperative. One of the difficulties in interpreting chest radiographs was due to the superimposition of the normal structures of the chest and of certain pathological deposits in the lungs themselves. Perhaps no radiograph was more difficult to interpret than one taken after thoracoplasty.

After describing briefly the elaborate apparatus for tomography constructed by the Sanitas Company of Berlin, Dr. McDougall said that there were simplifications of the method which were likely to be of equal value. Tomographic images could be produced by a relatively simple mechanism. The ordinary *x*-ray apparatus might be modified to permit of its use for this purpose, and experience would show that costly apparatus was not necessary. At the same time he deprecated the idea that tomography could be carried out by any kind of makeshift or that it was a sort of radiological trick. In his device, with the tube above the couch at an angle to the horizontal plane and the film-holder below, there was a pendulum arrangement whereby tube and holder moved reciprocally—that is to say, the tube was at one extremity, the film-holder at the other, and when electrical contact was made they both moved in an arc of approximately 45 degrees in opposite directions. Such was the apparatus which had been used at Preston Hall during the last twenty-two months; but there were other modifications, in one of which the arc was not used at all, the tube moving in a horizontal line parallel with the film-holder, and in another the tube and the body of the patient moved in opposing arcs, the film-holder remaining stationary.

He proceeded to show how by tomographic investigation the different features of cases of pulmonary tuberculosis could be brought out. The successive appearances at increasing distances from the front of the chest were shown in his films, and he drew particular attention to the elucidation of cavities and cavity formation in general. Many cavities in lung tuberculosis, he said, seemed to be pear-shaped with the larger end towards the posterior part of the chest. Clear information was obtainable by this method of the nature of the cavity wall and the tissues immediately around it, also the relationship of the cavity to the bronchial tree. Most important was the clear evidence afforded of separate and distinct cavities in the lung unsuspected so long as the investigation was limited to ordinary radiography. The exhibition of his tomograms of lung appearances evoked repeated applause from those present. In conclusion Dr. McDougall admitted that there were many features in tomography which gave rise to great difficulties in interpretation. The method was new, but it seemed likely to be employed more and more in the many branches of radiology as time went on, and it had already extended the boundaries of clinical investigation, especially of the chest.

Dr. E. W. TWINING said that this method offered fascinating possibilities to the radiologist. Not least valuable was its stimulus to learn anatomy afresh in a three-dimensional way. He addressed himself to the study of the air passages by this method, and showed that malignant bronchial obstruction might be diagnosed quite successfully without the use of lipiodol. He worked with a very simple home-made attachment, using a lever instead of a pendulum to get the proportional movement between tube and film. One of the uses of tomography was to increase the contrast between the object and its surroundings, though it meant some loss of detail. In a series of pictures he showed how rapidly the shape of pulmonary abscess cavities appeared to alter as sections were taken. One of the major problems was the differentiation between malignant neoplasm and chronic abscess, and here tomography could furnish some useful hints. He believed that tomography gave a better chance of investigating the wall of a cavity and the septa than any other method. Again, in an obscure case of collapsed lobe of the lung it was possible by this sectional method to follow the vessel shadows into the particular lobe. The components of the mediastinum could be sorted out in a way not possible by ordinary radiography. He illustrated its use also in bronchial stenosis. It was possible to show by tomography the point of narrowing somewhere in the bronchus in malignant disease. In Manchester, although the Royal Infirmary was a pioneer in the use of lipiodol, there was some reluctance to employ the method of pouring quantities of oil into the bronchi, which was always messy and possibly dangerous, and in some bronchial conditions tomography offered an effective substitute, though not, he thought, in bronchiectasis.

Dealing with the applications of tomography to other fields, Dr. Twining showed how it could bring out the patella much more evidently, also the sterno-clavicular joint. Further, it illustrated the topography of the skull. The ordinary antero-posterior view of the skull was confused by many overlapping shadows, and a series of tomograms resolved them. Particularly well shown was the mass of bone which filled the temporo-mandibular joint. With the mastoid cells and the petrous bone tomography was not very satisfactory, but in the skull it was of value in bringing out delicate calcifications, and it distinctly showed pineal tumour. As cheaper apparatus became available, he believed the method would come into routine use.

Dr. H. C. COLYER showed a few films illustrating the use of tomography in chest conditions, and described a slight modification of technique which he had adopted. Dr. PHILIP ELLMAN suggested that tomography should be useful in certain cases of bronchiectasis, particularly when the heart shadow interfered with the usual view. Dr. S. C. SHANKS asked whether there was any experience available of this method in the abdomen, in finding calcified gall-stones for instance, or in intravenous urography. Dr. GRAHAM HODGSON said that he, as a radiologist, had been filled with enthusiasm for this new method.

Dr. TWINING, in reply to the above questions, said that by tomography the fact of bronchiectasis could be established and it could be ascertained which lobe it was in, but when it came to saying what kind of bronchiectasis it was lipiodol had the advantage every time. He had not used it for cholecystography; detail must be shown in the gall-bladder, and contrast was already pretty good, but tomography, while it heightened contrast, lost some detail.

In reply to a further question, Dr. MCDOUGALL said that now that the gross chest conditions had been explored it was proposed at Preston Hall to make an intensive investigation of sputum-positive cases with minimum radiological signs.

ACUTE RHEUMATIC FEVER

At a meeting of the London Association of the Medical Women's Federation on October 25, with the president, Miss E. C. LEWIS, in the chair, Professor J. W. MCNEE gave an address on acute rheumatic fever.

Professor McNee said that since returning to Glasgow he had been impressed with the frequency and severity of the acute rheumatic diseases in Glasgow as compared with London. He referred particularly to cases of acute rheumatism seen in the early spring of 1937, especially in adults and adolescents. He discussed the features and possible aetiological relationship between three different types: (1) ordinary acute rheumatic fever; (2) chorea; and (3) an illness starting with the usual phenomena of acute rheumatic fever but running on directly into the typical picture of rheumatoid arthritis. He spoke of the clinical severity of the first type, the striking effects of salicylates on the fever and general symptomatology, and the marked tendency to relapse if the heavy dosage of salicylates was relaxed too soon. In the second type he denied that chorea only affected alert and nervous people; the dull and apparently unemotional factory girl seemed just as susceptible. The third type of case was important in relation to the problem of the aetiological connexion between acute rheumatism and rheumatoid arthritis. These cases when seen in adolescents were not cases of Still's disease—there was never enlargement of lymph glands or spleen.

Endocarditis occurred in all three groups; but this was not proof of a direct aetiological connexion between the groups. An exactly similar endocarditis might occur in other and quite different diseases. He had seriously begun to wonder if the acute rheumatic diseases, especially rheumatic fever and chorea, represented any true clinical and infective entity—his faith in these things had been shaken by the recent developments in the knowledge of scarlet fever. Perhaps the Aschoff body was the sole clue available at present, but was that a lesion caused by a specific virus, or merely the reaction round a small area of necrosis due to various infective or toxic agents? Were Aschoff bodies to be found constantly in chorea or in the third type of case referred to? It was difficult to interpret the epidemiological facts about acute rheumatic disease that were already known. It was usually a seasonal disease in Britain, having its greatest incidence in November, but it had been common this year in early spring. He was impressed, as was Thompson in Birmingham, with the number of patients who told of damp houses and of residence near a river. It was difficult to suggest any influence due to diet—the disease did not seem specially to attack those in the extremest poverty and squalor, but often those who had been well described as the "decent poor." Professor McNee concluded by saying that none of the hypotheses of aetiology—streptococci, allergy, or filterable virus—was at all convincing. Work on all of the three types he had described must be continued in the centres where the rheumatic diseases were particularly prevalent, and Glasgow certainly appeared to be in this category.

Local News

ENGLAND AND WALES

Tuberculosis in Wales

Reference is made in the twenty-fifth annual report of the King Edward VII Welsh National Memorial Association, which covers the year ended March 31, 1937, to the conference at Shrewsbury last December, when details of a more intensive campaign against tuberculosis mortality were approved, it being admitted that the provision hitherto made by the Memorial Association had been inadequate in some respects. It was decided that the Association, acting as agents of the local sanitary authorities, should assume responsibility throughout Wales for obtaining and recording the basic data concerning patients, should carry out certain preventive measures, and act more decidedly as regards discovered housing and sanitary defects. With the co-operation of insurance committees and approved societies there should be a tightening up of the practice of notification and reference to tuberculosis officers, panel practitioners being circularized and greater emphasis being placed on the necessity for prompt reference of suspected cases among insured patients to regional medical officers preparatory to enlisting the help of tuberculosis officers. The attention of the Welsh Board of Health should be drawn to the laxity in certain quarters in the notification of tuberculosis, the transmission of notifications from district medical officers of health to county medical officers, and the correction of housing and sanitary defects. This conference was followed by another in February of this year, when an adjusted financial estimate was approved, and by a third in March, when opposition was manifested to the proposals of the Memorial Association, a deputation of which subsequently met the Minister of Health and its programme was reiterated. The council of the Association deprecated the fact that the progressive and ordered development of the plan for the National Campaign against tuberculosis in Wales had been most unfairly interrupted. The report states that the total number of deaths from all forms of tuberculosis in Wales and Monmouthshire during 1936 represented a rate of 0.816 per 1,000, as compared with 0.925 in the previous year and with the rates for 1936 of 0.692 in England and Wales together and 0.681 in England. The hope is expressed that this gratifying decrease in mortality will be more than maintained in future years. Emphasis is laid on the danger of exposure to "open" cases in overcrowded homes, especially in conjunction with under-nourishment and dietetic defects, and it is suggested that good might be done by freeing children temporarily from adverse home conditions. There is still a serious shortage of laboratory accommodation, and research work is retarded by the pressure of routine investigations. Surgical blocks for the treatment of cases of chronic tuberculosis as a part of the ordinary surgical tuberculosis hospital are advocated by Dr. Alexander Brownlee, it being impracticable to treat these patients adequately in their own homes and uneconomical to deal with them in the general wards of these institutions.

An Optical Centenary

Not to many firms is it given to celebrate a hundredth anniversary, or at least to have been carried on for that length of time by members of the same family, and the fact that W. Watson and Sons, Ltd., of High Holborn, London, makers of microscopes and other optical instruments, have achieved that record well deserves the production of an interesting brochure to commemorate the event. The firm was founded in 1837 by William Watson, and a son, a grandson, and a great-grandson of the founder are directors of the firm at the present day. It has had its present address in High Holborn for three-

quarters of a century, and nine members of its present staff have seen over forty years' service. The brochure sets out many interesting reminiscences of the firm's early work in photography (when "crowned heads and members of the nobility flitted through the showrooms . . . to receive advice or criticism of their photographic efforts"), *x* rays, cinematography, and, especially, microscopy. It was about the eighties of the last century that the serious use of the microscope in medicine and in medical teaching began, and a microscope brought out by Watson's in 1889 found wide acceptance not only in the schools but in the societies of amateur microscopists, which were then springing up all over the country. The firm was also a pioneer in camera production before the camera was popularized as it is to-day. Their detective camera was one of the earliest of the hand cameras, and they also introduced a reflex as far back as 1890. Their work in *x* rays became so considerable that another company—Watson and Sons (Electro-Medical) Ltd.—was formed. The firm claims to be the first to have demonstrated *x*-ray apparatus in the London hospitals.

Royal Dental Hospital

The Royal Dental Hospital of London held its twenty-eighth annual clinical "at home" on November 20, followed by the annual dinner of the staff and past and present students. In the morning demonstrations were given in the hospital's in-patient department (which is at Charing Cross Hospital), and in the orthodontic department, the conservation room, and the mechanical laboratory. Lectures were given on the uses of zinc oxide and oil of cloves in dental surgery by Mr. V. A. F. Greenish, and on the construction of radium applicators for lesions in and around the mouth by Mr. D. G. Walker. In the afternoon clinical cases, general and orthodontic, were exhibited, including some cases recently treated in the electrotherapeutic department; prosthetic cases were shown in the appliance room, and there were exhibitions of radiograms in the *x*-ray room and of photomicrographs and drawings in the research department.

Mr. Frank Coleman presided at the annual dinner, and in proposing the health of the hospital and the dental school briefly sketched its history, which fell, he said, into three periods. During its period in Soho Square two outstanding events took place—the formation of the Odontological Society and the granting of a licence in dental surgery by the Royal College of Surgeons—in both of which some of the men associated with the school took a prominent part. Afterwards the hospital moved into Leicester Square, close to its present home, and here also two events took place in which the school had its share: the passing of the Dentists Act, 1878, and the formation of the British Dental Association. The third period, with the hospital and school in its present premises, had again been marked by two events—the Dentists Act, 1921, and the appointment of dental surgeons to schools and in the Services. The important scientific event of the first period was the introduction of nitrous oxide gas; of the second, the application of *x* rays to dentistry; and of the third, the realization, thanks mainly to their old friend William Hunter, of the relationship of oral sepsis to general health. As for the future of the dental school, this must be largely bound up with amalgamation with a general hospital to consolidate and expand their gains; at the same time the school must not be regarded as a satellite of any general hospital. The dean (Mr. H. Stobie) said that the school greatly regretted the death of Sir John Bland-Sutton, who had been consulting surgeon on its staff for about seventeen years; in his place they had been fortunate enough to secure Sir Holburt Waring. He also reported the resignation of Dr. E. W. Fish, who had given ten years' service, and who, they were all glad to know, was going to continue at St. Mary's Hospital his outstanding researches under conditions which the Royal Dental Hospital could not provide. He mentioned various other changes which had taken place in the staff, and reported an increase in the number of students entering the hospital and very satisfactory examination results. Mr. V. A. F. Greenish proposed the health of the guests, who included officers of the British Dental Association, examiners for the Royal College of Surgeons, members of the board of management of the hospital, and representatives of the Army Dental Corps. Mr. Bryan J. Wood, president of the British Dental Association, in responding, spoke particularly of the service of dentists with His Majesty's Forces. The conditions of pay and service in the Army and Navy were now regarded as adequate, but this could not be said of the conditions offered in the Royal Air Force, and the step had been taken of refusing advertisements of the Air Ministry for officers in that Service. A witty speech by Mr. A. T. Pitts in proposing the health of the chairman concluded the evening.

Sheffield Hospital Amalgamation

The boards of the Sheffield Royal Hospital and the Sheffield Royal Infirmary on November 17 approved the promotion of a Parliamentary Bill seeking an amalgamation of the two institutions under the title of Royal Sheffield Infirmary and Hospital. Mr. F. W. Osborn, chairman of the Royal Hospital board, said that the amalgamation would not interfere with co-operation between all the voluntary hospitals in the area. Existing places and equipment would continue to be used so long as they were efficient, but when any buildings became unsuitable they would be replaced by the most modern type of structure on the site of the new hospital. Sir Arthur Hall, M.D., said that in this matter Sheffield was only doing what had already been done in other large cities.

SCOTLAND

Old Edinburgh Hospitals

In the series of Rhind Lectures on Mediaeval Edinburgh, Dr. C. A. Malcolm delivered an address on "Hospitals and Hospices of Mediaeval Edinburgh." The Church, he said, was the chief provider of hospitals, and each monastery had an almoner whose duties included that of seeking out the sick and suffering in the neighbourhood. Three abbots of Holyrood had each founded a hospital: Abbot Crawford that of St. Paul in Leith Wynd, Abbot Bellenden that of St. Leonard on a hill in Holyrood Park, and Bishop George Crichton, an ex-abbot of Holyrood, one in Abbeyhill. Each collegiate church also had a hospital with a herb garden from which medicines were extracted. The town had almshouses, and the Knights Hospitallers had a hospital of St. John the Baptist between the Grassmarket and Greyfriars, which was abandoned in 1438 in favour of the Town's Hospital in St. Mary's Wynd. With regard to the latter, a document had recently been discovered in the General Register House in which it was stated that many of the poor and weak died because of the severe colds in these parts and the lack of hospitality, and therefore the town had decided to build a hospital with twenty-four beds, in each of which two patients could be accommodated. The town had been severe in its treatment of lepers, who were isolated in a dwelling outside the town near Calton. Persons affected with the plague were obliged to isolate themselves at home, but in 1612 all infected persons were sent to an isolation hospital in the Burgh Muir; a gibbet was erected in the grounds for those who attempted to escape. There were also hostels in Edinburgh from the twelfth century belonging to various Scottish abbeys, but these ceased to offer hospitality about 1420 because of the great expenses incurred.

Longmore Hospital, Edinburgh

It was stated at the annual meeting of the Longmore and Liberton Hospital that the daily average of in-patients during the past year had been 201. Out of 155 applica-

tions for admission during 1937, sixty-six were from persons suffering from cancer, of whom forty-nine were admitted. The pressure on the accommodation for female patients suffering from this disease has given the managers much concern, and more beds had been made available for them. Finance had, on the whole, been satisfactory, although the ordinary income did not meet the ordinary expenditure, and year by year a deficit had to be met out of donations and legacies received. This year the deficiency had amounted to £3,220, the ordinary expenditure having been £18,000.

SOUTH AFRICA

Overcrowding in Mental Hospitals

The report (1936–7) of the Mental Hospitals Departmental Committee, South Africa, discloses a lamentable condition of affairs. It is stated that the number of patients resident in institutions is far in excess of the accommodation available. Only in the case of European males does the accommodation appear to be in any way adequate. European females and native patients of both sexes are sadly overcrowded. Even among Europeans the beds are in some cases so close together, and passage through dormitories is so hindered by extra beds, that in a recent instance a patient was murdered by one of his fellows before it was possible for the attendants to intervene. Native patients were found to be sleeping in absolute contact with one another, forming a solid layer of humanity, so that it was scarcely possible to pass through the wards. Available accommodation for patients is further reduced by the lack of adequate quarters for the European staff, who are too often accommodated in rooms intended for patients. Some of these unfortunate nurses occupy "single rooms," measuring about seven feet by nine, with armoured doors and guarded windows. These rooms are, in effect, cells intended for noisy, dirty, or refractory patients. The hardship is accentuated in the case of night nurses, who, on account of the close proximity of these quarters to the patients' day rooms, are unable to secure their proper rest. The report states that the committee, after careful inspection of all the hospitals and institutions, decided that the accommodation provided is frequently of such a nature as to be detrimental not only to the recovery but also to the actual well-being of the patients. It is further stated that as long ago as 1913 a Select Committee found the accommodation provided to be both inadequate and unsatisfactory. Improvements and additions since that time have not merely failed to keep pace with increased requirements, but in some instances have been insufficient even to overtake the needs which then existed. This prevalent overcrowding, which "makes impossible the separation of the noisy from the tranquil, the dirty from the clean, the maniacal from the harmless," creates, in the opinion of the committee, an obstacle to recovery which cannot be overcome by any conceivable method of therapy. Following a large number of general recommendations by the committee, the report states that the whole administrative machinery of the Mental Hygiene Branch of the Department of the Interior is fundamentally defective, and a strong conviction is expressed that it should be transferred to the Department of Public Health as an autonomous subdepartment. The formation of an advisory board or council, similar to the Leprosy Council, is also advocated.

Health of Capetown

The report for 1936 of the medical officer of health for the city of Capetown records a serious epidemic of whooping-cough during the year under review. The number of deaths reported was 188, the majority being of non-European children under 5 years. It is stated that the non-European death rate from whooping-cough per 1,000 children living was eight times as great as the European in children under 1 year, and ten times in children between 1 and 2 years. There is no reduction in the mortality from tuberculosis, which is a major problem for the health authorities. Among the white population the death rate from this disease is twice as great as that of the Union as a whole, and exceeds that of England and Wales. In non-Europeans the position is much worse, the tuberculosis mortality being five times as great as in Europeans. This unfortunate state of affairs is attributed to low social and economic conditions prevalent among the coloured people, and also in the poorest sections of the whites. Overcrowding, bad housing, and malnutrition are contributory factors, which can only be improved by measures of social reform. The provision of clinics, hospitals, and sanatoria is also inadequate, and although a considerable increase in the expenditure on tuberculosis services is foreshadowed, still further extensions, the report states, will be necessary. The non-European section of the population of Capetown constitutes approximately one-half of the city's 300,000 inhabitants. The greater part are of mixed race, with a definite admixture of white blood, known as "Cape Coloured." These people are largely the descendants of slaves, whose emancipation was completed in 1835. Their ancestors of the eighteenth century and earlier comprised Europeans, Hottentots, blacks from Mozambique, Madagascar, and other parts of Africa, and East Indians from the Dutch East Indies. One section of the Cape Coloured, known as "Malays," is Moslem in religion, and more immediately descended from natives of the Dutch East Indies. These "Malays" tend to intermarry with Moslems from British India who are comparatively newcomers. The Cape Coloured also include a small proportion of Bantu natives. Among all these people the principle of compulsory education is not applicable. As a result there is much illiteracy. In addition to ignorance a lack of discipline tends to produce a high incidence of venereal disease and alcoholism. Although the bulk of the city consists of houses of brick or stone, served by water-carriage sewerage and a good municipal water supply, some thousands of non-Europeans live in wood and iron shacks on the outskirts. In these outlying districts stercus is collected weekly in pail closets by mule or ox wagons under the control of the city engineer's department, and removed to trenches in municipal land, where it is buried. This work presents considerable difficulty, especially in the flat sandy region known as the Cape Flats, owing to lack of roads, soft soil, and standing water in winter. It is stated that more than 5,000 premises were dependent on this form of sewage removal in June, 1936.

A. Caeiro and O. Orias (*Rev. argent. Cardiol.*, May–June, 1937) after recording optically the heart sounds at the apex, mesocardial, and pulmonary areas simultaneously with the jugular pulse in twenty healthy young medical students came to the following conclusions. An auricular sound at about 29 vibrations per second was recorded in 85 per cent. of cases, lasting for about 0.1 second, appearing in the records with an amplitude of 6 mm., about 0.015 second after the beginning of wave A of the venous pulse, and from 0.034 to 0.046 second after the top of the *P*-wave in the electrocardiogram. The first heart sound was found to be composed of four groups of vibrations, the first consisting of one vibration, the second of one and a half vibrations, and the third and fourth of two vibrations each. The second sound showed a frequency of 36 vibrations per second all over the praecordial area, but was recorded with maximal amplitude in the mesocardiac area. The so-called third heart sound was recorded in 65 per cent. of the cases, the average figures for its properties being as follows: duration at apex—0.117 second, mesocardiac region—0.136 second, and base—0.092 second; number of vibrations per second at apex—3.7, mesocardiac region—34, and base—33.

Correspondence

The Problem of Safe Milk

SIR,—Dr. J. W. P. Thompson's exhortation to his colleagues (*Journal*, November 20, p. 1046) to protect their own households by insisting on the purchase of "safe" milk for domestic consumption might well be reinforced by a broader motive. Not mere protection at home but protection also for patients is the doctor's function. Indeed, to judge from some recent utterances, it is by preventive methods rather than by curative ambitions that the general practitioner is to justify his continued existence. However this may be, it is certain that were every practitioner to make himself an active agent in instructing the public on the dangers of raw milk and on the simple methods by which these dangers can be avoided, a forward step in preventive medicine would be gained.

The medical indictment against raw milk is a serious one in reference both to tuberculosis and to acute epidemic disease, and the possession of the knowledge on which this judgement is based imposes a corresponding measure of responsibility; and such responsibility can be discharged only by the conveyance of the relevant information to the public—a task for which the general practitioner has a special opportunity.

The need for such education at the present time is urgent, as the intention of the Government is not to control by central legislation the quality of the milk supply, but to place this function at the option of the local health authorities. Hence in municipal areas generally it will lie with the representatives of the voters, and indeed with the voters themselves, to say whether this option shall or shall not be exercised. Active opposition from the agricultural interest is certain; all the more need therefore for a sustained educational campaign by those whose concern and responsibility is the protection of patients and of the public. And here obviously the general practitioner commands the field.

The sermon required is a simple one; it needs, however, constant repetition. Tuberculin-tested milk is attractive, but its supply is limited as the herds to provide it are, and will long be, few in number; in addition, it is relatively expensive, and its guarantee is against tuberculosis only. Efficiently pasteurized milk, on the other hand, means both general and particular safety, and this at an economic price; where it cannot be obtained sterilization or boiling may be accepted as a substitute.

This simple position is confused in the public mind by various names applied to particular grades or brands of milk, and one of these is the official term "accredited." Naturally the purchaser concludes that milk so labelled possesses all the virtues—cleanliness, purity, safety. Yet "accredited" milk cannot profess to be "safe" milk, for it is neither obtained from tuberculin-tested herds nor is it protected by pasteurization or other heat process. The intention of the Government is to let each local area settle the quality of its own milk supply. Surely it is for the medical profession to see that those who have to make the choice are duly warned and instructed.—I am, etc.,

London, W.1, Nov. 21. C. O. HAWTHORNE.

Typhoid Precautions

SIR,—As soon as a medical man, be he medical officer of health or general practitioner, knows that typhoid fever has broken out in his district, he gives urgent instructions to his household, his patients, and his acquaintances to take every precaution—to boil their milk and water; to toast or lightly re-bake the bread; to buy butter and cheese in packets; to avoid ready-cooked cold meats; if salads are eaten, to soak then in chlorinated water before washing them in boiled water; and so on.

Why should not the general public have the same early warning and opportunity of escape? The reasons I have been given are:

1. Fear of producing a panic. Surely panic is born of fear and ignorance. Knowledge averts panic. And in any case, are we so prone to panic?
2. That if the epidemic is likely to be considerable the source will be found so quickly that the epidemic will be nipped in the bud. In the Sydenham epidemic I am informed that the ultimate source was never found, though there was sufficient evidence before long to cut out what was probably the distributor. In this epidemic one of the late primary cases was that of a mother. She died.
3. That the business of ice-cream merchants and so on might be adversely affected, and who would compensate them if they were found "not guilty"? If this risk is uninsurable, one has only to think of the thousands of pounds being paid in compensation to farmers in the attempt to stamp out foot-and-mouth disease.

It is difficult to believe that so many primary cases would have occurred if the milk had been boiled at Bournemouth, and the water at Croydon, immediately on the notification of, say, the first three cases.

Instead of the deplorable secrecy practised by the Ministry of Health I would have flaming publicity, with posters on every hoarding and warnings on every cinema screen. I can think of no excuse for sparing every conceivable effort to minimize an epidemic of this dire disease. I would suggest that the following instructions should be issued.

1. Food should be handled as little as possible.
2. Food should be protected from flies.
3. The hands should be washed always immediately after using the lavatory. (Typhoid germs live in excreta.)
4. The hands should always be washed and scrubbed before handling food, whether for oneself or for others. (During an epidemic a certain number of persons may become infected without suffering.)
5. All milk and water should be boiled.
6. Bread and bought cakes, if not wrapped, should be baked again lightly or toasted.
7. Butter, margarine, and cheese should be purchased only in packets.
8. All meats, except tinned meat, should be cooked at home.
9. Bought salads, if eaten at all, to be washed thoroughly, soaked in weak chlorinated water (Milton may be used) for an hour, and washed thoroughly again in boiled water.
10. No food to be eaten out of the house unless it is known that all these precautions are being taken conscientiously.

—I am, etc.,

London, S.E.26, Nov. 14. W. M. PENNY.

Immunization against Typhoid

SIR,—From reports in the lay press it would appear that the Croydon health authorities are afflicted with the same doubts and anxieties as those which beset many members of the profession in Bournemouth last year. I refer particularly to an announcement by the medical officer of health for Croydon advising against inoculation on account of the dangers of the "negative phase." There was so much diversity of opinion here on this subject that I sought and obtained the opinions of a number of authorities in London and at the universities. As the replies were in the nature of private letters I do not feel free to quote them, but with one or two exceptions the

general consensus of opinion was to the effect that inoculation was definitely indicated and that the risk of a "negative phase" could be ignored. At the Royal Victoria Hospital, where some forty-odd cases of typhoid were treated, all the nurses were inoculated, and no case of typhoid occurred among them.

In a recent report by Dr. R. Taylor in the *Journal* (October 16, p. 760) on the treatment of an outbreak of typhoid among the Spanish refugees in England, the camp medical commandant mentions his own initial doubts as to the advisability of inoculation *in the presence of an epidemic*. Like us he was unable to find an authoritative statement on the subject in any textbook. He decided to inoculate all the children, and although the hygienic conditions were bad owing to the children's unfortunate habits, nevertheless the epidemic was quickly stamped out and there were no instances of severe attacks of typhoid occurring during the "negative phase." One hopes that by the time this appears in print the Croydon outbreak will have been arrested, but in view of the doubts which have assailed the minds of doctors in three separate epidemics it seems worth while ventilating this problem.

I cannot resist this opportunity to express the hope that the Lister Institute's serum should be given a trial in the present epidemic. Our experience here led us to hope that, given early and in full doses, it may prove a most valuable method of treatment.—I am, etc.,

Bournemouth, Nov. 22. R. VAUGHAN FACEY.

*** According to the *Times* of November 23, anti-typhoid serum has been obtained from the Lister Institute by the Croydon Public Health Department and supplied to local doctors for use in fighting the outbreak. Commenting on the use of serum in an annotation in the *Journal* of November 20 (p. 1029), we said: "The method is at least worth a trial for selected individuals where the risk of infection is high in the hope that the severity of attack may be mitigated, even although complete protection may not be conferred." Referring to the other point raised by Dr. Facey, the value of prophylactic inoculation, we said that this might be "employed with reasonable expectation of success in protracted or widespread outbreaks, and is indeed the only effective measure if the source of the infection is not detected or completely eradicated." We would refer readers interested in the serum treatment of typhoid to the article by Dr. Harold Cookson and Dr. R. V. Facey in the *Journal* of May 15, 1937.—ED., *B.M.J.*

Oysters and Typhoid

SIR,—In at least two recent cases persons who had contracted typhoid fever after eating oysters in restaurants obtained damages from the proprietors of the restaurants concerned. In the second case the legal advisers of the restaurateur, apparently thinking their case to be hopeless, settled the case out of court after the evidence of the plaintiff had been heard. In both cases the wholesalers and oyster-fishing companies implicated emerged scatheless. The reasons for this are not at all clear to me. In each case great stress was laid on evidence suggesting that the oysters were stale, but surely nobody believes that staleness can produce *B. typhosus*. It can be alleged, with what measure of truth I do not know, that a stale oyster allows *B. typhosus* to multiply, or to acquire virulence; but that suggestion should not tell against the restaurateur, who has no means of ascertaining that he has been supplied with a potentially dangerous article. As no evidence was given that any member of the restaurant staffs was a typhoid carrier, it must be presumed that either the oysters were already infected with the *B. typhosus* when caught (in which case the fishing company might perhaps be held to be blameworthy), or in fact the oysters had nothing to do with the typhoid. I can see no reason for finding against the restaurants. Perhaps somebody can tell me where my reasoning has gone astray.—I am, etc.,

London, W.9, Nov. 14. JAMES GOSSIP.

Research in Rheumatism

SIR,—To dispute priority is, I admit, the confession of mental feebleness, but Sir Leonard Hill (*Journal*, November 20, p. 1045) is strangely wrong. The first rheumatism research unit was founded by myself at St. Mary's Hospital in 1897. It was then a real unit—namely, one man, or, as the dictionary has it, "a single thing or person." Soon, before 1900, it became two people, and then fell into line with the modern "unit," which suggests to a mere countryman great horses straining at the plough, but is in fact more like a limpid stream running through a lordly but expensive and aristocratic property. Whether this unit has done valuable research it is not for me to say. Certainly some of the work has been re-done as original in this country—which is always consoling—and certainly the art of "drawing" the tonsils became more popular after 1900. I would remind Sir Leonard Hill that *Researches on Rheumatism*, a collection of papers, was published in 1913, about a quarter of a century ago. —I am, etc.,

Bath, Nov. 20. F. JOHN POYNTON.

SIR,—In the report in the *Journal* (November 20, p. 1042) of the laying of the foundation stone of the new "arthritis unit" at the Hospital of St. John and St. Elizabeth by Sir Kingsley Wood it is stated that the arthritis unit in question is the second of its kind to be established in this country. From a letter in the same issue from Sir Leonard Hill it would appear that the first was established by the London County Council at St. Stephen's Hospital in connexion with the St. John Clinic. Much may depend upon what is meant by an arthritis unit, but if it means a hospital ward for cases of arthritis associated with a laboratory for bacteriological and other investigations, I think it must be emphasized that so far from these being the earliest attempts to investigate rheumatic disease in hospital and laboratory combined they are distinctly late in the field.

The Devonshire Royal Hospital in Buxton, which treats about 4,000 cases of rheumatic disease every year, nearly half of them being cases of arthritis of one type or other, established a laboratory and appointed a bacteriologist in 1912. This should, I think, be regarded as the first arthritis unit in this country. In 1923, with the help of an annual contribution of £250 from the corporation, a research chemist was appointed and another laboratory equipped. So far as I am aware this was the earliest instance of research into rheumatism being assisted by a municipality, the London County Council being second in the field. At the present time the Devonshire Royal Hospital has a bacteriologist, a research chemist, a radiographer, and two laboratory assistants engaged in research work, although that of necessity includes an enormous amount of routine investigation. The work done has perhaps received more notice in the United States than in this country, which is only now beginning to realize the importance of rheumatic research.

The public is apt to look for immediate and striking results as soon as any scheme of research is begun, but

the records of cancer research, with its infinitely greater resources, show how much work is necessary before such results can be achieved. It is only "little by little" that we shall bring the scourge of rheumatism under control, and years of painstaking labour with little to show will be required. Some of the results of the work done at the Devonshire Royal Hospital will be found in the three reports on chronic rheumatic diseases of the British Committee on Chronic Rheumatism, and a full account of all the published work will gladly be supplied to anyone interested on application to the hospital.—I am, etc.,

Buxton, Nov. 20. CHARLES W. BUCKLEY.

"Cures" in Rheumatic Disease

SIR,—What significance are we justified in attributing to the word "cure" when applied to such notoriously intractable conditions as the chronic rheumatic diseases? It will be conceded generally that actual cure of many forms of rheumatic disease—apart from temporary cessation or alleviation of symptoms of variable duration—can, in the present state of our knowledge, scarcely be anticipated, except when the condition is mild in form and in the earliest stages, and when gross structural changes have not yet occurred. In most cases of arthritis, for example, except in mild forms and in the earlier stages, some degree of permanent damage has been done to the joint structures, particularly the articular cartilage, and although remarkable improvement may be brought about by treatment, it is surely unscientific to use the word "cure" in many of these cases, even if there has been complete cessation of symptoms for a time. A careful follow-up system extending over years would doubtless reveal some history of recrudescence of symptoms in many of the cases discharged from clinics or institutions as "cured."

These perhaps rather platitudinous reflections are prompted by the somewhat reckless manner in which the word "cure" is used in statistics relating to rheumatic diseases, and in the mass of "literature" that descends upon most of us, not only relating to various remedies, secret or otherwise, and forms of physical apparatus, etc., but also in the form of prospectuses and advertisements of various institutions for the treatment of rheumatic diseases. Some of these institutions are not staffed by legally qualified medical practitioners, and in the present unsatisfactory state of the Law it is doubtful whether much can be done to prevent the dissemination of their extravagant and misleading claims and the exploitation of the public. I regret to observe, however, that advertisements emanating from certain well-known spas in this country also make use of the word "cure" in a similar reckless manner. These advertisements emanating from the lay authorities must assuredly cause grave concern to the distinguished medical men attached to these spas, some of whom are doing such admirable work. We often read of tariff rates for a two or three weeks' "cure." At some spas "cure tickets" can be obtained covering all treatments and entertainments, and a recent widely distributed spa advertisement claims that "all sufferers are relieved: most are definitely cured"!

The "cure" is often alleged to be due to certain physical or chemical properties of the spa waters. Although the internal and external actions of the waters are at long last being investigated scientifically, is it not true to assert that to date the evidence garnered which will satisfy strict scientific scrutiny is meagre in the extreme, and scarcely justifies the confident tone of some spa advertisements? It will probably be argued that the word "cure" is of long-established usage for a course of treatment at a spa, irrespective of the result of such treatment. May I utter a plea that this misleading term should be abolished, at any rate when applied to courses of treatment for rheumatic disease? The tragedy of disappointment will then be avoided by those members of the public who have suffered for many years from crippling rheumatic disabilities and who really expect a cure and have not the necessary subtlety to interpret the term as synonymous with a "course of treatment."—I am, etc.,

London, W.1, Nov. 21. A. G. TIMBRELL FISHER.

Puerperal Fever in General Practice

SIR,—At a meeting of the Pathological Society of Manchester on November 10 Dr. C. G. Paine of Sheffield gave an address on recent advances in the pathology and treatment of streptococcal infections, based on a fatal case of puerperal sepsis, the aetiology, pathology, and bacteriology of which were fully investigated and the treatment described. The aetiology and treatment are of immediate practical importance to the general practitioner, not merely on their own account, but also because of their medico-legal aspects.

The patient was attended by a midwife, who called in a doctor on account of delay in the second stage, but when he arrived that stage was over and he found a lacerated perineum, which he sutured. On the third day the patient was not well, and on the fourth she was so obviously ill that she was sent into hospital, where she died, after surviving the acute septicaemia, from embolism due to thrombosis spreading from the pelvic veins to the great veins. Haemolytic streptococci were found in her blood and locally. Streptococci of exactly the same strain were found in the throats of both doctor and midwife, but not in the throats of her husband and children, though other strains of streptococci were present in their throats too. In hospital she was treated with sulphanilamide, and the history and temperature charts suggested very strongly that the treatment pulled her through the acute stage, though it failed to prevent the complications which proved fatal.

This case, together with others on record, points to the advisability of using sulphanilamide in the same way as we use anti-diphtheritic serum—that is, in all suspicious cases and at the earliest possible moment, and particularly before sending a serious case into hospital if that involves a few hours' delay. In this instance it seems highly probable, though not certain, that the infection passed from the doctor or midwife to the patient, though it might possibly have been the other way round, the patient already having the germs in her throat and conveying them to her attendants. In either event the wearing of masks would have tended to prevent the passing of the infection from one to the other. Apart from this, is it not possible that a toilet of the throat by drinks, mouth-washes, gargles, or sprays might materially diminish the risk of infection? This applies, of course, to all who come near the patient in labour, and not merely to the doctor and midwife. To insist on all concerned "sterilizing" their mouths and throats would make for safety, and would be decidedly educative. An accusation of gross negligence for not wearing masks, for not making any attempt to cleanse the throat, or for not administering sulphanilamide at the first danger signal, could hardly have been substantiated in this case to-day, but when records of similar cases have accumulated someone will find himself attacked, and we do not know how soon that may be.—I am, etc.,

Bramhall, Nov. 13. J. PRICE WILLIAMS.

Open Endotracheal Anaesthesia in Infants

SIR,—In the *Journal* of November 20 (p. 1025) there is an account, by Dr. L. T. Clarke of Birmingham, of a new anaesthetic appliance for anaesthetizing infants. I wish to point out that the technique of endotracheal anaesthesia without expiratory valve and rebreathing bag and open to the air has been in continuous use at the Babies Hospital, Newcastle-upon-Tyne, for over two years. A description of the T-piece and other details was published in the *British Journal of Surgery* in July, 1937; and a more detailed paper appears in the current number of *Current Researches in Anesthesia and Analgesia*, published in the United States by the International Anaesthesia Research Society.

I am particularly interested in Dr. Clarke's version of the "open" endotracheal technique because in February of this year I received an invitation to visit Birmingham and anaesthetize two cases, for Mr. W. E. M. Wardill and Mr. T. Pomfret Kilner, at the Queen's Hospital. The operations were pharyngoplasty and the repair of cleft palate in an infant of 15 months, and repair of a hare-lip in a baby of about 4 weeks. In addition to the surgical demonstration by Mr. Kilner and Mr. Wardill, I demonstrated my "open" endotracheal method for anaesthetizing babies to Dr. Clarke, Dr. McCardie, Dr. Featherstone, and other anaesthetists. Although I am responsible for introducing to Birmingham the technique so ably described by Dr. Clarke, I would prefer to describe the method as a modification of the inhalational endotracheal technique devised by Dr. Ivan Magill.—I am, etc.,

Newcastle-upon-Tyne, Nov. 20. PHILIP AYRE.

Combustion of Potassium Chlorate Tablets

SIR,—A few years ago a warrant officer in the Royal Navy, while riding a motor bicycle, came into collision with a motor car, and sustained minor bony injuries and burning. He had been taking potassium chlorate tablets for a sore throat, and these tablets were in a cardboard box in his pocket. After the collision the area around his pocket burst into flames, and he was severely burnt. Another accident that occurred only a few weeks ago was to a patient of mine who, on getting into his car and sitting down, suddenly heard a hissing noise in his waistcoat pocket, and found himself on fire. He noticed two tablets of potassium chlorate which he had bought fall to the ground in flames and set alight the seat of his car. He states that twenty-five tablets were in a paper packet, and so far as he knew there were no matches in his pocket, but he is not quite certain. If a safety-match box was there the potassium chlorate tablets in contact with the phosphorus of the lighting part of the box may have ignited, but he is still confident that the tablets were not loose in his pocket, but were wrapped in paper. It would be interesting to learn whether spontaneous combustion can occur. I should be glad to know if anyone has any explanation to offer, and I feel a public warning to motorists should be issued on the dangers of an accident due to potassium chlorate tablets.

Pharmacists realize the combustible nature of potassium chlorate when friction is excited between this substance and phosphorus, and for this reason are in the habit of instructing their clients in the careful handling of potassium chlorate tablets. It is a simple matter to demonstrate this danger by striking one of these tablets on the friction paper of a box of safety matches. The paper, which contains phosphorus, causes friction, and the tablet is seen to flame up. In the same way sufficient flame can be made by the tablets, on rubbing them against the head of a red match, to set the match on fire. Should these tablets of potassium chlorate be loose in the pocket, friction, and to some extent detonation, coupled with the heat of the pocket, will cause a fierce flame if the tablets are in contact with loose red matches or a safety box. The chemical nature of potassium chlorate is such that it readily gives up its oxygen, which will assist in feeding the flame; in the process phosphorus pentoxide is formed ($5KClO_3 + 6P = 5KCl + 3P_2O_5$).

Severe burns have been caused, however, when the patient has had no matches or anything of a phosphoric nature in his pocket. It appears that in the presence of any small amount of organic matter, and under the influence of detonation or friction, the potassium chlorate will burst into flames. It is therefore possible, despite the fact that the tablets are enclosed in a cardboard box, that they may be fired while walking or driving, and any grit or organic matter present in one's pocket will cause damage. In the presence of acid, such as one might get from acid drops, etc., these potassium chlorate tablets will be broken down into chloric acid ($HClO_3$). Even the weak hydrofluosilicic acid will break down the potassium chlorate into chlorate acid ($2KClO_3 + H_2SiF_2 = 2HClO_3 + K_2SiF_2$). In its chemical properties this acid bears a strong resemblance to nitric acid, but it is more easily decomposed; being a very powerful oxidizing agent, a drop of it will set fire to paper, and it oxidizes phosphorus with explosive violence. Potassium chlorate is also used in the making of detonators and explosives.—I am, etc.,

Hastings, Nov. 16. E. F. ST. JOHN LYBURN.

*** An accident of the same kind was recorded by Dr. J. Pereira Gray of Exeter in the *Journal* of November 23, 1929 (p. 992). It is evident that a warning needs to be reissued from time to time. Some responsible manufacturers print a caution on the label of packets containing chlorate of potash tablets, advising the public not to carry these loose in the pocket and to keep them away from matches.—ED., *B.M.J.*

Gastroscopy

SIR,—I was interested to read the report of the meeting of the Royal Academy of Medicine in Ireland on gastroscopy. I would like to emphasize that it is as difficult to diagnose the presence of early malignant change in an ulcer by gastroscopy as it is with the naked eye, and thus too much reliance should not be placed on a single examination. With regard to the anaesthesia, I have found that euphagin tablets, which are sucked, cause less discomfort to the patients than painting the palate and pharynx with decicain. This tip was given to me by Mr. Rodgers and Dr. Hancock of St. Bartholomew's.

I cannot agree with Mr. P. J. Smyth when he states that the instrument is especially valuable in the diagnosis of jejunal ulcer, as the gastro-enterostomy stoma often lies in the blind spot. I have been able to see the stoma in six of nine cases with a gastro-enterostomy, and only two ulcers at the anastomosis, although two others had been demonstrated radiologically. The use of the prograde gastroscope, as used in Professor Henning's clinic, would increase considerably the number of stomas seen. The passage of a gastroscope to the majority of patients is not an ordeal, as suggested by Dr. Alan Thompson, though to a highly nervous patient, and to my one medical patient, it was described as uncomfortable but not actually painful ("a little Teutonic perhaps"), but in retrospect not so bad as he had anticipated.

Gastroscopy should never eliminate the radiologist (Henning, Gutzeit, *et al.*) but should supplement his findings, as the lesser curve of the antrum, for instance, is better demonstrated by a barium meal. Once the instrument is passed the number of failures to examine the stomach is small. In three cases out of 216 examinations I failed to obtain a view. The introduction is comparatively easy, but the interpretation of this the most difficult of endoscopic methods requires a great deal of experience.—I am, etc.,

Royal Victoria Infirmary, Newcastle-upon-Tyne, Nov. 20. J. DUDFIELD ROSE.

Disseminated Focal Pneumonia

SIR,—Perhaps if I had stated more clearly in my description of disseminated focal pneumonia that this represents only one variety among the atypical pneumonias, Dr. Higgins (*Journal,* November 20, p. 1045) would not have been under the misapprehension that this condition is a common one. Even in hospital practice (certainly in this hospital) one sees a very large number of the more benign lung inflammations. During the past four years I have made careful studies of them in an attempt to make my conception of them more precise.

The common type of relatively benign pulmonary involvement following upper respiratory infections described by Dr. Higgins has been frequently observed. Radiologically many of these cases present a picture which corresponds well to his description of them as "a patch on the lung"—namely, an ill-defined but localized opacity of fairly homogeneous density. This I take to be the condition described by Allen (*Ann. int. Med.,* **10**, 441) as "acute pneumonitis."—I am, etc.,

J. G. SCADDING.

British Postgraduate Medical School, Nov. 20.

Treatment of Psychoneuroses

SIR,—Dr. Marion E. Mackenzie's letter (*Journal,* November 20, p. 1046) serves as a model of exposition in plain language of the difficulties which beset the medical man in private practice. Thin partitions divide the bounds of the various mental sicknesses classified under the official nomenclature, and not very infrequently it is found that a diagnostic label is attached which embraces only some of the signs and symptoms, but that prejudices the treatment. What the patient suffers from—the pathology—and the underlying cause are more important than the name of the disorder.

The "conversion hysteria," let it be called, of the stenographer cited by the author is a fair example of a case coming well within the province of the family practitioner to treat, but the general and increasing tendency of to-day is to ticket such cases neuroses and psychoneuroses and straightway pack them off to the psychiatrist, thus at least faintly branding the patient as a "nervous case" with all its damaging implications. As a lead in procedure in this class of disorder I quote Mott and Clouston: "The whole class of mental diseases should be regarded and treated, not as local disturbances, but as widespread disturbances of the normal physiological conditions of the whole organism." Fear, hunger, and love are dominating instincts, and their reactions in behaviour are conditioned by social convention. Toxic influence, endocrine unbalance, and metabolic deviation should be ever present in the thoughts of the investigator who attaches importance to biology and biochemistry in the causation and treatment of disease.—I am, etc.,

Southampton, Nov. 21. ARTHUR KING.

Obituary

R. V. DOLBEY, M.S., F.R.C.S.

Late Professor of Clinical Surgery, School of Medicine, Cairo

Mr. Robert Valentine Dolbey, who died at Chelsworth Hall, Suffolk, on November 13, at the age of 59, was the son of T. H. Dolbey, barrister-at-law, and from Dulwich College, where he made his name as an athlete, went to study medicine at the London Hospital. He obtained the English Conjoint diplomas in 1902, the M.B.Lond. degree in 1903, the M.S. (qualifying for the gold medal) in 1905, and the F.R.C.S. in the same year. He served in the South African war and received the King's medal with five clasps. He then went to practise in British Columbia, where he was very successful as a surgeon, but in August, 1914, he left this congenial work to join the Army in France, reaching the rank of temporary major R.A.M.C., and being twice mentioned in dispatches; he saw war service in Belgium, Tanganyika, and on the Italian front.

In 1919 he was appointed to the chair of clinical surgery at the School of Medicine, Cairo, and surgeon to the Kasr-el-Aini Hospital; and the American College of Surgeons paid him the honour of election as one of its Fellows. He was also for some years surgeon to the Anglo-American Hospital at Cairo, and during his time in Egypt contributed papers to the *Lancet* on the incidence of cancer and on surgical tuberculosis in that country. Tributes have been paid in the *Times* and elsewhere to his fine work for the wounded during the war on various fronts. Mr. Dolbey wrote two interesting books, *A Regimental Surgeon in War and Prison* and *Sketches of the Campaign in East Africa.* He had been a member of the British Medical Association for more than thirty years.

We regret to announce the sudden death on November 17 of Dr. ARTHUR INGRAM COOKE of Chobham, Surrey. He was born in 1881, the second son of the late Rev. Frederic Cooke, rector of Westbury, Shropshire, and studied medicine at Gonville and Caius College, Cambridge, graduating B.A. in the Natural Sciences Tripos of 1902. He then went to St. Thomas's Hospital, taking the B.Ch. degree in 1907, and served as ophthalmic house-surgeon and casualty anaesthetist there. After proceeding to the M.A. and M.B. in 1909 he was house-physician to the Brompton Hospital and house-surgeon to the Sussex County Hospital and to the Hospital for Women at Brighton. He took his M.D. degree at Cambridge early in 1914. Dr. Cooke held a temporary commission in the R.A.M.C. during the last two years of the war, and served as eye specialist to the East African Forces. He was an accomplished all-round practitioner, deservedly respected by patients and colleagues. He joined the British Medical Association in 1911, and was a member of the Woking and District and the Camberley Medical Societies.

The death of Miss ANNIE BRUNYATE, M.D., occurred on October 13 at High Littleton House, Somersetshire, to which she had removed less than two months previously on her relinquishment, under the age rule, of the post of deputy medical officer of health for the Parts of Lindsey, Lincolnshire. She was a scholar of Girton College, and gained honours in the Mathematical Tripos, 1895, proceeding then to the London School of Medicine for Women with an entrance scholarship. She graduated M.B., B.S. of the University of Durham in 1902, proceeded M.D. in 1905, and four years later took the Cambridge D.P.H., with distinction in sanitary science. Dr. Brunyate joined the Lindsey Public Health Department in 1917, and it is significant that the post of deputy M.O.H. was created for her in 1930, as had been the post

of senior assistant for maternity and child welfare at an earlier date. Her share in the development of maternity and child welfare work was due as much to personal qualities which enabled her to elicit the enthusiasm of her helpers, both professional and lay, as to organizing ability in the ordinary sense; but on several occasions she was called upon to address conferences in London on her special subjects. As deputy M.O.H. she was also in charge of mental deficiency throughout the county, and was normally entrusted with the confidential inquiries into cases of maternal mortality which sometimes call for so much tact. She had been a member of the British Medical Association since 1906. Her death is mourned by a very wide circle of friends in all ranks of life, her relations with many of whom, while arising in the first instance out of professional contact, had become of a much more personal character.

Medico-Legal

CLAIM AGAINST A MEDICAL MAN

In medical practice unusual cases often come in batches. Mr. Justice Tucker's first case on his appointment was the action against Mr. Winsbury-White. His second was a semi-medical case about an oyster alleged to have been infected with typhoid, and a few days after that he heard another action against a medical man. A father unsuccessfully claimed damages against Dr. J. E. Readman of Penge, alleging negligence in the treatment of his ten-year-old son, who died of peritonitis. The claim was for funeral expenses only, and was apparently made to have the question of liability settled.

The parties agreed that the doctor attended the boy on October 16, 1936, for minor injuries received in a motor car accident, but found him well enough to go to school next day. On the evening of Saturday, October 17, the boy complained of pain round the umbilicus and suffered from vomiting and constipation. The father went round to the surgery on the Sunday morning and saw the doctor. Thereafter the evidence of the two parties conflicted on nearly every material point. The father said that the doctor diagnosed ptomaine poisoning from his description of the symptoms, and gave him some medicine to take to the boy. A neighbour, who went to the doctor's home with a message early on the Monday morning, said in evidence that she had asked that the doctor should call round, as the little boy was much worse, and that the maid had said she would tell the doctor. The father said he went round to the surgery in the evening, and the woman there said that the doctor still had some visits to make. He denied having said that it would do if the doctor called on the Tuesday. Dr. Readman's version, on the other hand, was that when the father came to see him on the Sunday morning and told him of the boy's illness, he said that he was not on duty himself but that his assistant, Dr. Davidson, could visit the boy during the day. The father said emphatically that that was not necessary. He then told him to keep the boy warm, directed a suitable diet, and gave him a magnesia mixture for the boy, telling the father to send for him if the boy became worse, so that Dr. Davidson could call in. He added that in any case the boy would be visited on the Monday. There would have been no difficulty in Dr. Davidson's calling on the Sunday if the father had wanted him to. He never used the words "ptomaine poisoning," but said it was possible that a meal of brawn had set up inflammation of the stomach. He made a note that the boy was to be visited on Monday. He was at his consulting room early on Monday morning, but received no message about the boy. He put down the boy's name to be visited by Dr. Davidson on that day.

Miss Ralph, Dr. Readman's dispenser, said in evidence that she told the father on the Monday evening that Dr. Davidson had not completed his round but would visit the boy that evening. The father then said that Dr. Davidson need not visit the boy that night provided that he went early on the Tuesday morning. Dr. Readman then, she said, cancelled the order for the Monday visit and entered a visit for the Tuesday in his book, informing Dr. Davidson of the change. Dr. Davidson saw the boy on Tuesday, and Dr. Readman saw him shortly afterwards and sent him to hospital. The surgeon who operated on him there said that peritonitis had probably supervened about 3 a.m. on the Monday; if Dr. Readman had seen the boy on the Sunday he might have suspected appendicitis, and if the operation had been performed on the Sunday the boy would have had a better chance of living. The boy died on the following Friday.

The learned judge in giving judgement said that as there was a complete conflict of evidence on nearly every vital point he had to see if any light were thrown on the conflict by the contemporary documents. None of these mentioned the Monday visit, and the only mention of a specific request was that of Mrs. Newton, the neighbour. The father wrote a letter of complaint to the General Medical Council on November 3, but made no reference in it to his visit to the surgery on the Monday evening. When his solicitors wrote to the doctor on November 13 they did not mention the Monday evening visit. The letter written by the doctor's solicitors, on the other hand, set out his case explicitly and stated that the father himself had prevented an earlier visit. His lordship was satisfied on the whole of the evidence that the father had made nothing in the shape of an urgent request for a visit, and that Mrs. Newton had done no more than request that a call should be made on the boy during the Monday; she had not given an urgent message. It was clear that Mr. Wright had wanted attention for his son, but had had no idea of the urgency of the case. He therefore dismissed the action.

PARTNERS' SIGNATURE ON CERTIFICATE

An interesting point came before the Court of Appeal in a recent workmen's compensation case. A workman was drawing compensation for an injury to the head, and the employers, considering that he had recovered, desired to stop payment. In accordance with the law they required him to submit to examination by a medical practitioner provided by them. They appointed for this purpose a firm of medical partners practising under the name of Legge and Legge. The firm duly returned a certificate beginning "We hereby certify that we have examined . . . (the workman on a certain date) . . . and in our opinion he has wholly recovered." The form of certificate required by the Workmen's Compensation Act, 1925, s. 12 (3), begins, "I hereby certify," and "we" and "our" were substituted in writing. There was no suggestion that both the partners had not examined the patient. The question arose whether the certificate satisfied the Act, which provides that if a medical practitioner has examined the workman and has certified that he has recovered, and a copy of the certificate together with notice has been served on the workman, the employer can stop the weekly payment. The county court judge took the view that this certificate was insufficient because it purported to contain the opinion of more than one doctor, and was signed by a combination of persons who might be anybody but doctors. In his opinion, therefore, it nullified all subsequent proceedings. Sir Wilfrid Greene, Master of the Rolls, disagreed. He saw nothing in the Act to suggest that a combined examination by two medical men would not satisfy its requirements, and said that if the two partners had each signed his own signature no question could have arisen provided that both had examined the man. The firm's name he considered to be merely shorthand for the two signatures. The certificate would not, however, have been satisfactory if only one of the partners had examined the man and signed in the name of the firm, for then the certificate would not say on its face which of the two or more partners had made the examination. Where two or more doctors in a firm made an examination he considered it might be desirable for each one to sign individually; he could not, however, regard this as a strict and necessary requirement. The other two Lords Justices agreed.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on November 20 the following medical degrees were conferred:

D.M.—A. W. D. Leishman, R. B. Scott, E. P. Edmonds.
M.Ch.—M. W. C. Oldfield.
B.M.—W. W. Coppinger, W. F. Dunham, G. F. C. Hawkins, A. L. Jacobs.

UNIVERSITY OF LONDON

At a meeting of the Senate, held on November 17, the title of Professor of Bacteriology was conferred on Dr. L. P. Garrod, F.R.C.P., in respect of the post held by him at St. Bartholomew's Hospital.

The title of Emeritus Professor of Anatomy in the University was conferred on Dr. Thomas Yeates on his retirement from the Courtauld Chair of Anatomy at the Middlesex Hospital Medical School.

UNIVERSITY OF LEEDS

The following appointments were made at a meeting of the Council held on November 17:

Clinical Lecturer in Medicine and Honorary Demonstrator in Medical Pathology: H. G. Garland, M.D. *Honorary Demonstrator in Medicine:* J. A. Price, M.D. *Honorary Demonstrator in Pathology:* N. Lissimore, M.B., Ch.B. *Honorary Demonstrators in Anatomy:* F. R. W. Hemsley, M.B., Ch.B., and I. J. Keidan, M.B., Ch.B. *Reader in Experimental Pathology:* J. W. Orr, M.D., D.P.H.

Dr. F. C. Happold was appointed to represent the University at the eleventh International Congress on the History of Medicine, to be held in Jugoslavia in September, 1938.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Annual Meeting of Fellows and Members

The annual meeting of Fellows and Members of the Royal College of Surgeons was called for November 18, but after waiting the prescribed fifteen minutes the President, Sir Cuthbert Wallace, Bt., announced that the required quorum (30) had not been obtained, and therefore a meeting could not be constituted, nor could any resolution be moved. He spoke to those present, however, on a few matters in the general annual report.

Sir Cuthbert Wallace said that primary examinations for the Fellowship would be held during the coming year in Australasia, India, and (for the first time) Egypt. The plan for oversea examinations was the most ambitious which had so far been undertaken. He mentioned the alterations to the College museum, which was now again open, and the re-arrangement and better equipment of the library, which had been made more comfortable for readers. The outstanding event of the year had been the rebuilding of the Bernhard Baron Laboratories, work on which began in January. It had proved a larger undertaking than was anticipated, owing to the discovery that the old foundations of one of the main walls were defective. Other matters to which he referred included the work of the research staff, the various awards, lectures, and occasions of hospitality, and the number of meetings of Council and committees (nearly a hundred during the year), which had doubled during the last decade. He also drew attention to the famous picture of Henry VIII granting the Act of union to the barbers and surgeons, which had been cleaned and specially lighted, and now hangs over the fireplace in the inner hall. He invited remarks from members.

Dr. Redmond Roche noted that the Council had approved, with the Royal College of Physicians, the appointment of examiners in medical subjects of the Incorporated Society of Chiropodists. Why should the College assist the ambitions of the chiropodists to have medical knowledge? He also noted that the President and Mr. Seymour Barling had been appointed to give evidence on behalf of the College to the Interdepartmental Committee on Rehabilitation after Industrial Accidents. Some surgeon in general practice might, by his knowledge of the environment of the people concerned, have given helpful evidence. Dr. Howard Stratford took exception to the too general phrase "medical subjects" as describing the examination of the chiropodists.

The President said that the alternatives were to fight the chiropodists or to exercise some measure of control over them, and the latter was what the two Colleges were trying to do. With regard to the Interdepartmental Committee, he agreed that the general practitioner was one of the most important persons in the treatment of fractures, and both the witnesses on behalf of the College would bear in mind the function of the general practitioner.

Sir Bruce Bruce-Porter was precluded from moving the usual resolution calling for some representation of Members of the College on the Council, but he was allowed to make some observations. He said that such a resolution had been brought forward forty-six times and never once lost. Why did Members go on after forty-six rebuffs? Partly because they had the British characteristic of not knowing when they were beaten. In 1931 the Society of Members took a poll, which showed 6,956 in favour and only 156 against. It was sometimes objected that with a wider franchise a Fellow who was not of the best standard might be a very astute electioneerer, and so find his way on to the Council; but Members would not wish to elect Fellows: the Fellows on the Council should be elected by those in their own category, and if any Member was elected and subsequently became a Fellow he should be required to retire as a representative of Members on the Council. It was also stated that the paucity of attendance at the annual meeting indicated that Members were not interested, but this was merely due to the feeling that the College was to a large extent a Fellows' preserve. Finally, he reminded the meeting that the day might come when the State took a far more active part in the control of medicine, and then it might not tolerate so many portals of entry to the profession. If such a state of affairs arose it would surely be of great advantage to the College to have a body of Members with a real interest in its status and activities.

Dr. W. L. Gillbard, secretary of the Society of Members, said that sufficient consideration had not been given to the public interest in this matter. As soon as he entered general practice a Member realized the unsuitability of a great deal of his training in surgery. Too much time had been spent in learning things which could only be of use to him on the assumption that he was going to be a consultant. The number of Members who started general practice totally unable to use an ophthalmoscope was depressing. Such defects would never be remedied until the College ceased to deprive itself of the experience of its Members.

Dr. P. B. Spurgin supported what had been said by the last two speakers. The Members were not making any unfair request; they were merely asking for a small representation on the Council.

The President declared the proceedings closed.

SOCIETY OF APOTHECARIES OF LONDON

Gillson Scholarship in Pathology

The Gillson Scholarship is awarded for the encouragement of original research in any branch of pathology, and is open to candidates under 35 years of age who (*a*) are either licentiates or freemen of the Society, or (*b*) obtain the licence or the freedom within six months of election to the Scholarship. The Scholarship is of the annual value of not less than 100 guineas. It is tenable for one year, the holder being eligible for re-election under conditions laid down in the regulations; the maximum tenure is three years. The Scholarship is awarded in January and applications must be in the hands of the adjudicators by December 1. Full regulations and conditions can be obtained from the Registrar's Office, Apothecaries' Hall, Water Lane, E.C.4.

The following candidates have been approved at the examination indicated:

Mastery of Midwifery.—Yeshwant Narayen Ajinkya, M.B., B.S., William Davies Cunningham, M.B., B.S., Lalit Kumar Mitra, M.B., D.C.H., Israel Rivlin, M.D., Gordon Scott, M.B., B.Chir.

Medical Notes in Parliament

In the House of Lords on November 23 the Expiring Laws Continuance Bill passed through Committee.

The Health and Housing Committee of Conservative M.P.s was addressed on November 17 by Dr. W. G. Savage, lately county medical officer of health for Somerset, and by Mr. Ben Davies of United Dairies Ltd. Both agreed that efficient, controlled pasteurization was the only guarantee, in present circumstances, for a safe milk supply. They afterwards replied to many questions by members representing agricultural constituencies.

The House of Commons read the Coal Bill a second time on November 23. A motion about malnutrition was down for discussion on November 24, and the Committee stage of the Air Raid Precautions Bill on the following day.

The National Health Insurance (Juvenile Contributors and Young Persons) Bill was read a third time by the House of Commons without debate on November 23.

The annual meeting of the general committee of the Parliamentary Science Committee was held on Tuesday, November 23, at the House of Commons, the Earl of Dudley (president) in the chair. It was stated that the committee had submitted a memorandum to the Lord President of the Council urging a scheme for the development and financing of scientific research. Correspondence is proceeding on this matter. The officers for the ensuing year include: president, Earl of Dudley; vice-president, Sir Arnold Wilson; chairman, Professor J. Graham Kerr.

Inquiry into Typhoid Outbreak at Croydon

Sir Kingsley Wood stated on November 18 that he had heard of the outbreak of typhoid in the Croydon district with great regret and had directed his officers to visit the town immediately with a view to co-operating with the officials of the council. The result was that effective steps were at once taken to safeguard the position as regards the water supply. He had informed the council that he proposed to direct a public inquiry into all the circumstances of the epidemic. The inquiry would be held by a man of legal qualifications, assisted by a medical man and an engineering expert.

Mr. Day asked why a warning was not given to the inhabitants as soon as pollution was known to the medical officer. Sir Kingsley said that matter would doubtless be brought before the inquiry.

On November 22 Sir Kingsley Wood announced the personnel and terms of reference of the inquiry. It will be held by Mr. H. L. Murphy, K.C., who will have as assessors Sir Humphry Rolleston, Bt., M.D., and Mr. H. J. F. Gourley, M.Inst.C.E. The purpose of this inquiry is to examine the causes leading up to the outbreak in Croydon, and the steps taken to deal with it. The inquiry will begin at an early date.

Insurance Practitioners' Postgraduate Courses

Sir Kingsley Wood told Sir Robert Rankin on November 11 that payments in respect of fees and expenses incurred by insurance doctors in attending approved postgraduate courses would be made out of the unclaimed proceeds of sales of national health insurance stamps with the aid of the normal Exchequer grant. He added that he had received no complaints from insurance committees as to the source from which the courses were to be financed. Certain administrative questions were under discussion with the National Association of Insurance Committees.

Gas Attack: Preventive Measures

The House of Commons discussed the Air Raid Precautions Bill on November 15 and 16. Moving its second reading, Sir Samuel Hoare said the Government would in a short time have a supply of gas masks sufficient to distribute to the whole population. The Government intended also to supply local authorities and their decontamination organizations with bleaching powder. The householder would be instructed how to act in the event of a gas raid and how to make one of his rooms gas-proof. The same precautions would be taken against mustard gas. There would also be precautions against fires caused by incendiary bombs.

Dr. Haden Guest said that in many parts of London the houses could not be made gas-proof. He thought that every local authority would have to face, in consequence of this Bill, increases in the staffs of hospitals and other institutions. Every local authority controlling hospitals had to prepare a plan showing which hospitals could be used as casualty clearance stations, which as base hospitals; and which institutions, such as public assistance institutions, fever hospitals, mental hospitals, etc., could be cleared of their inhabitants and used as base hospitals. People in the streets might be contaminated by mustard gas, and unless they had their clothing removed within fifteen minutes and decontaminated, and had the mustard gas removed from their skin within five minutes, every one of them would require hospital treatment, and it would put the hospitals to a terrible strain.

The Bill was read a second time by 324 to 135.

Medical Referees and Workmen's Compensation

Mr. John Jones, in the House of Commons on November 19, moved the second reading of the Workmen's Compensation Bill, which, he said, among other purposes, proposed an alteration in the system whereby a workman meeting with an accident had at present, if there was any dispute as to his disability, to accept the verdict of one medical referee. The Labour Party did not say that these gentlemen were unfair or prejudiced, but asked that instead of one person having power over the victims of accidents a Board should be established as during the war, when medical boards were set up to do similar work in connexion with the Army and Navy.

Mr. Arthur Henderson, in seconding the motion, said medical referees were men of standing in the medical profession, and no one on the Opposition side of the House sought to cast any reflection upon the individual referee. Nevertheless some of the questions which the referee had to decide, such as suitability for employment, were so important that the proposal was that they should be submitted to a medical board of three doctors.

Mr. Lyons moved the rejection of the Bill.

Sir Arnold Wilson said a legal chairman with two medical assessors would be a better medical board than three doctors, however skilled. Mr. Bull considered the existing provisions as to medical examination of workmen needed simplification and the removal of technicalities resulting from the decisions of the court and the regulations which had been made on this subject, but it would be hopeless to deal with the question piecemeal. The regulations for medical referees, issued in 1932, contained forty-six different rules, some of many clauses, and the whole question required to be gone into.

Mr. Fleming said that it was extremely difficult for the workman to succeed as a malingerer against the medical evidence. On the other hand, he had time and again seen cases in which medical evidence compelled the judge to say a man was fit for light duty when to laymen he appeared palpably unfit for any duty at all. When a medical assessor sat with the judge the judge undoubtedly had the final word in court. There was a tendency to have cases of compensation dealt with in that manner.

Mr. Cassells said he knew of many instances of medical referees who when they were not acting in that capacity were actually called upon by insurance companies to examine workmen on behalf of the employers. If a medical man had been in the habit of examining workmen on behalf of the employers he acquired quite honestly the employer's complex.

Mr. Geoffrey Lloyd said the power of a single man under the present system was great, and possibly some alternative course ought to be worked out, but, he asked, ought that

alternative to be a medical board? A good deal could be said for keeping the medical referees but having an appeal tribunal. The majority of cases were simple, and a medical referee was competent to deal with them. The best thing might be an improved system of referees with a larger number of specialists in the service and with appeals allowed to a tribunal. It was better to keep these matters in the hands of the medical profession so far as the purely medical issue was concerned. Referring to the treatment of fractures, he said Sir Robert Jones during the war had developed the idea that there should be minimum immobilization of the injured limb. That idea had been allowed rather to lapse in the treatment of industrial cases but was coming back, and the results were striking. Just as important was the treatment of the men when they left hospital. Much could be done by more careful provision of suitable light work. In future there might be reconditioning clinics for the men when they left the hospital. These ideas were being investigated by two of the strongest committees ever set up by the Home Office. When the reports of these committees were received the Government would consider as early as possible any recommendations for amendment of the Acts, and if they accepted those recommendations would take steps to introduce legislation to implement them.

The Bill was defeated by 205 to 141.

Lanarkshire Practitioners and Scottish Maternity Services

Dr. ELLIOT told Mr. Chapman on November 22 that he had received a resolution passed by the Lanarkshire Division of the British Medical Association wherein the medical practitioners of Lanarkshire regretted that they could not accept service under the Maternity Services (Scotland) Act, 1937. Local associations of practitioners in Lanarkshire and certain other districts of Scotland had expressed their dissatisfaction with the terms of remuneration which the Department of Health for Scotland, after consultation and in agreement with the Scottish Committee of the British Medical Association, suggested to local authorities as a suitable basis of arrangements with practitioners for medical services rendered by them under this Act. The Scottish Committee of the British Medical Association had summoned a representative meeting of their constituents, to be held on December 16, to consider the matter further.

Periodical Nutrition Surveys of School Children.—Asked by Mr. Leonard on November 11 to have an inquiry made into the "Oslo breakfast," which had beneficial results on the well-being of school children in Oslo, Mr. KENNETH LINDSAY said the claims made for this meal had been considered by the Advisory Committee on Nutrition appointed by the Minister of Health. While the value of the experiment was recognized, its adoption in this country would be open to practical objections. There were other equally good and convenient methods of supplementing the home diets of children found to be in need of additional nourishment. The Board of Education suggested that local education authorities would do well to consider the advisability of holding periodical nutrition surveys at which all children not receiving meals would be passed under review. A number of authorities had acted in accordance with this suggestion. The Board proposes to review the position in other areas to secure a general improvement in the discovery of under-nourished children.

Leper Accommodation in Great Britain.—Sir THOMAS MOORE asked, on November 11, whether out of the sixty known lepers in Great Britain only twelve received treatment in homes suited for that purpose, and if Sir Kingsley Wood proposed any action to remedy this. Sir KINGSLEY WOOD answered that in the conditions existing in this country the disease was unlikely to be conveyed from one person to another, and no action would appear to be called for in the interest of the public health.

Medical Certificates in Unemployment Assistance.—Mr. ERNEST BROWN stated, on November 11, on the authority of the Unemployment Assistance Board, that there was no invariable practice of requiring a medical certificate as a condition of increasing an allowance for the purpose of providing extra nourishment. Where a doctor certified that his patient was in need of extra or special food as distinct from medicine or drugs the Board's allowance was usually adjusted to meet any extra outlay by the applicant in obtaining such food. The furnishing of the certificate was regarded as part of the medical service rendered by the doctor, any payment for which fell outside the Board's powers.

Old Buildings used for Nursing Homes.—Dr. LEECH, on November 18, asked Sir Kingsley Wood to invite the local authorities concerned, either by scheduling a slum-demolition scheme or by stricter and closer supervision, to prevent more worn-out lodging-houses and old residences being converted into private nursing homes in the area between Harley Street and Baker Street, Marylebone. Dr. Leech asserted that modernization of such buildings did not render them completely sanitary or provide for a sufficient circulation of fresh air, or make them structurally suitable in surgical cases where quiet for patients and comfortable accommodation for the nursing staff and a proper distance from kitchen annoyances were essential, nor provide means for the easy removal of patients in case of fire other than by the dangerous use of outside ladders and iron staircases. Sir KINGSLEY WOOD, in reply, pointed out that the London County Council had power to refuse an application for registration in respect of a nursing home if satisfied that the situation, construction, accommodation, staffing, or equipment of the premises rendered them unfit to be used as a nursing home. He had no information that this power was not adequately exercised, but he had asked the County Council for their observations.

Water Supply in Denbighshire.—Sir HENRY MORRIS-JONES, on November 18, asked whether the attention of the Minister of Health had been drawn to the insanitary state of the water supply at Kinmel Bay, in the county of Denbigh. Sir KINGSLEY WOOD said in reply that the urban district council of Abergele informed him that their medical officer of health was not prepared to advise them that the condition of the water was such as to be injurious to health. Rhyl Urban District Council would be prepared to give a direct supply.

The Services

HONORARY SURGEON TO THE KING

The King has approved the appointment of Major-General G. G. Tabuteau, D.S.O., late R.A.M.C., as Honorary Surgeon to the King, in succession to Major-General D. S. Skelton, C.B., D.S.O., late R.A.M.C., who has retired.

EFFICIENCY DECORATION

The King has conferred the Efficiency Decoration of the Territorial Army upon Colonel E. M. Cowell, D.S.O., and Lieutenant-Colonel E. Scott, D.S.O., under the terms of the Royal Warrant, September 23, 1930.

No. 14 STATIONARY HOSPITAL DINNER

The eighteenth annual dinner of the medical officers of No. 14 Stationary Hospital will be held on Thursday, December 9, at the Trocadero Restaurant, Piccadilly, W., at 7.15 for 7.45 p.m., with Colonel C. R. Evans, D.S.O., in the chair. The price of the dinner is 12s. 6d., exclusive of wines. The honorary secretaries are Major-General H. M. Perry and Dr. H. L. Tidy, 39, Devonshire Place, W.1.

No. 29 GENERAL HOSPITAL DINNER

The eighteenth annual reunion dinner of the 29th General Hospital will take place at the Langham Hotel, Portland Place, W., on Saturday, December 4, at 7.15 p.m., when Lieut.-Colonel S. H. Withers, C.M.G., will preside. Officers who wish to be present should communicate with Captain A. Percy Groves, Heronfield, Meadow Court Road, Leicester.

Medical News

The Cantor Lectures for 1937–8 will be delivered by Professor J. C. Drummond, D.Sc., at the Royal Society of Arts, John Street, Adelphi, W.C., on Mondays, November 29 and December 6 and 13, at 8 p.m. His subject is "Historical Studies of English Diet and Nutrition." Applications for tickets should be made to the secretary of the Society.

A course of five lectures on "A Comparative Study of Filter-passing Bacteria and Viruses" will be given by Professor F. W. Twort, F.R.S., on December 6, 8, 10, 13, and 15, at 5 p.m. The first four lectures will be delivered at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C., and the last one at the Brown Animal Sanatory Institution, 149, Wandsworth Road, Vauxhall, S.W. Admission is free, without ticket.

A meeting of the Hunterian Society will be held at Simpson's Restaurant, Cheapside, E.C., on Monday, December 6, at 8.30 p.m., when Mr. E. T. D. Fletcher and Dr. K. McFadyean will open a discussion on "The Chronic Cough." The meeting will be preceded by a dinner at 7.15 p.m.

Three lectures on "The Foundations of Terrestrial Life: The Soil and the Green Plant" will be given by Sir Frederick Keeble, F.R.S., at the Royal Institution, 21, Albemarle Street, W.1, on November 30 and December 7 and 14, at 5.15 p.m. Fee to non-members for this course 7s. 6d.

A meeting of the Kensington Medical Society will be held at St. Mary Abbots Hospital, Marloes Road, W., on Wednesday, December 1, at 8.30 p.m., when Dr. W. Bentley Purchase, H.M. Coroner for North London, will open a discussion on "The Medico-legal Aspects of Abortion." Professor James Young, Dr. Letitia Fairfield, and Mr. V. B. Green-Armytage will take part in the discussion.

The sixteenth annual dinner and dance of the British Serbian Units Branch of the British Legion will take place at the Lyceum Hall, Soho Square, London, W., on Saturday, December 4, at 6.30 for 7 p.m. All friends of Jugoslavia are welcome. Tickets (6s.) from the honorary secretary, Miss C. M. Marx, 24, Melcombe Court, Dorset Square, N.W.1.

The sixth Italian Congress against Tuberculosis will be held at Tripoli from December 17 to 20. Further information can be obtained from the Federazine Ital. Naz. Fascista per la lotta contro le tuberculosi, Via Nazionale, 200, Roma.

On November 18 Sir Farquhar Buzzard, Regius Professor of Medicine, opened extensions to the Acland nursing home at Oxford, which have been made possible through Lord Nuffield's generosity, and unveiled a tablet commemorating Lord Nuffield's gifts.

The Duchess of Norfolk opened the newly completed miners' welfare block at the Sheffield Royal Hospital on October 30. The block has been financed wholly from the South Yorkshire District Miners' Welfare Committee Fund. Mr. Harry Platt of Manchester said the new block would make it possible for an orthopaedic surgeon at the hospital to carry out treatment to every injured man or woman from the moment of injury right to the end, when the patient was ready to resume work, without any break in continuity. It meant that the hospital would be in the forefront in the treatment of injuries, and would have a chance to establish a reputation second only to Vienna.

A reception was held at the new offices of the *Practitioner* at 5, Bentinck Street, W., on November 18. Sir Humphry Rolleston and Dr. Alan Moncrieff, the editors, and Mr. J. W. Hills, M.P., Mr. Michael Fletcher, and Viscount Moore, directors, received the guests, who were much interested in the architecture and modern equipment of the building.

As recorded in our Parliamentary Notes this week at p. 1099, the Minister of Health announced in the House of Commons on November 18 that he has directed a public inquiry into all the circumstances of the epidemic of typhoid fever at Croydon. Up to the time of going to press the number of known or suspected cases was 180, with 7 deaths.

On November 17 in Manchester Dr. F. W. Eurich of Bradford was presented with the medal of the Textile Institute for his researches into anthrax. Mr. George Garnett, past-president of the institute, said that Dr. Eurich had given the wool trade the enormous advantage of his own private investigations. In 1905 the Home Office set up a committee at Bradford in conjunction with the Chamber of Commerce, and Dr. Eurich was invited to help them. The story of his investigations revealed the enormous qualities of mind and purpose he had brought to bear on the subject, and the saving of life that resulted from his discoveries was on record. No testimonial could be too high a recognition of his work in the elimination of the disease.

An illustrated article on the physical welfare of the Dionne quintuplets in the November issue of the *Canadian Medical Association Journal* shows that the general health and development of these children, who are now in their fourth year, is normal, and that there is no evidence of any physical or mental abnormality resulting from their prematurity.

A revised edition of *Physical Exercises for Asthma*, approved by its honorary medical advisory committee, has been published in aid of the Asthma Research Council's funds. The pamphlet on its first appearance was noticed in these columns on January 5, 1935. On hearing that many asthma sufferers have benefited by doing the exercises the Council decided to issue this revised edition, with further instructions and a special section on exercises for children, at the low price of 1s. to put it within the reach of all pockets. The pictures have been improved, and there are instructions for an abbreviated form of abdominal breathing for use when an attack is starting. A copy of the pamphlet may be obtained by sending a postal order for 1s. to the Asthma Research Council, King's College, Strand, London, W.C.2.

On the occasion of the eightieth birthday of Professor Bernhard Nocht, founder of the Institute of Tropical Medicine in Hamburg, medals were awarded to the following in recognition of their services to tropical medicine: Drs. Rodhain (Belgium), Brumpt and Fourneau (France), E. Martini and E. Reichenow (Germany), P. Manson-Bahr and G. H. F. Nuttall (Great Britain), Snijders and Swellengrebel (Holland), Bastianelli and Castellani (Italy).

The Agricultural Research Council has bought the Compton Manor estate of about 1,500 acres, on the Berkshire downs, for a field station for experimental work on problems of animal health. Dr. G. W. Dunkin, at present superintendent of the Farm Laboratories of the Medical Research Council at Mill Hill, has been appointed director of the field station at Compton, where a laboratory and houses for the breeding and maintenance of stocks of small laboratory animals will be built.

Dr. D. H. de Souza and Dr. P. H. Deeny (Middle Temple) and Dr. L. W. Bain (Gray's Inn) were called to the Bar on November 17.

At the instigation of the health office, the sale of specialties for "slimming" is forbidden in the State of Louisiana under severe penalties.

A bronze bust of Sertürner, the discoverer of morphine in 1803, was recently unveiled in his birthplace at Neuhaus, Westphalia.

The King has granted Dr. Harold Armstrong Crouch, O.B.E., M.C., authority to wear the Order of the Nile, Insignia of the Third Class, conferred upon him by the King of Egypt in recognition of valuable services rendered by him.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Secretary, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS should be addressed to the Advertisement Manager. Orders for copies of the *Journal* and communications with reference to subscriptions should be addressed to the Secretary, B.M.A. House, Tavistock Square, W.C.1.

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QUERIES AND ANSWERS

Buccal and Lingual Ulcers

Dr. HECTOR MACLEAN (Troon) writes in reply to "Puzzled" (*Journal*, September 11, p. 564): I have recently had three patients, all women in the prime of life, complaining of very painful ulcers on the tongue, gums, and insides of lips and cheeks. The ulcers varied in size from that of a pinhead to that of a sixpence. Each comprised an angry dull red ring enclosing a grey necrotic centre; each case was swabbed and yielded a growth of *Staphylococcus viridans* in pure culture or as the predominant organism. All responded to ten 7½-grain tablets of prontosil album, one being taken every two hours. The pain disappeared at once, while the ulcers healed slowly.

Nocturnal Twitching of Lower Limbs

"ANAEMIA" writes: May I suggest to "Wilts" that the symptoms his patient suffers from *may* be the beginning of subacute combined degeneration of the spinal cord? I suffered from this train of symptoms for a long time before it was discovered I was suffering from pernicious anaemia. This was before liver treatment was discovered. I keep my blood count fairly normal by liver treatment, but at times I slip backwards, the main manifestation being the return of the spasmodic movements and twitching in my legs, and, to some extent, in my arms. I also suffer from cramp in the muscles more than usual. A blood examination is indicated, with special reference to the size of the red cells. If the size is above normal the patient will probably get up of a morning rather tired, etc. A hot bath *every* morning will help this condition, and to some extent help the diagnosis. May I add I have seen these symptoms in some of my patients with pernicious anaemia.

Incontinence of Faeces

Dr. E. C. DAWSON (Derby) writes in reply to "A. M.," who asked for suggestions for the treatment of a case of nocturnal incontinence of faeces in a girl of 18 (*Journal*, November 13, p. 1003): I was faced with a very similar problem some time ago in a boy aged 10. In my case, however, I was provided with a clue that may not be present in "A. M.'s" case—namely, the consistent appearance of one or two spots of bright red blood "in the mess in the bed." I succeeded in ridding my patient of his complaint; and benefiting from the experience of this case, I would make the following suggestions. The nocturnal incontinence may be due to the reflex stimulation of defaecation produced by the patient inserting a finger into the anus during her sleep. Such an action may be the result of a wakeful bedtime habit that has become so regular as to be continued unconsciously in sleep, when control over defaecation is lost in the event of an unusual external stimulus. The habit of inserting a finger into the anus may have been begun for one or both of two reasons: (i) to relieve irritation caused perhaps by a thrombosed pile, (ii) to produce erotic sensations. I suggest that a close examination be made for (*a*) a slight blood stain produced by mild trauma, (*b*) suggestive creases or stains in the patient's nightwear, and (*c*) traces of faecal matter in one of the finger nails. I cured my patient by making him wear thick gloves well padded with cotton-wool at the finger tips when going to bed.

LETTERS, NOTES, ETC.

Canti's Cancer Film

Dr. RICHARD KERRY writes from Montreal: What is perhaps our most valuable work on cancer, Canti's film, does not seem to have been exploited to the full. If this could be retaken and measures (as used by the cinema photographer) applied to slow the boiling motion to about one inch a minute, what a revelation we should have! A film taken with a moderately high power and re-enlarged several times should show little loss of definition, and if a series could be run and contact with various chemicals and coagulants established we should have information on the local disorganization of growth which might prove invaluable as a basis of treatment.

Strangulated Ovary in a Hernia in an Infant

Dr. J. P. ZUM BUSCH (Liestal, Switzerland) writes: Having read the interesting note on a case of strangulated ovary in a hernia in a child aged 3 months, published by Dr. M. H. Fridjohn and Mr. M. Lee in the *Journal* of August 7 (p. 266), I beg to add a similar case in a still younger child. Many years ago, when surgeon to the German Hospital, London, I operated on a female child 10 days old admitted for strangulated inguinal hernia. The operation showed as contents of the hernial sac an ovary of bluish colour and much swollen, with a twisted Fallopian tube. The child made an uninterrupted recovery. Shortly afterwards I removed a huge ovarian cyst with twisted pedicle from a little girl, aged 10 years, who had just arrived from South Africa. The twisting of the pedicle had probably begun during the sea voyage, but the condition had been mistaken for violent seasickness. Both cases were published in one of the German medical weeklies (probably the *Dtsch. med. Wschr.*), but as I cannot at present consult a medical library I am unable to give the title and the number of the periodical.

Developmental Cysts in Upper Incisor Region

Mr. H. T. ROPER-HALL (Birmingham) writes: I am grateful to the readers who have been so kind as to send me details of their cases of the above type for the paper which I am preparing. As these conditions are not common, I shall be glad if readers will be so kind as to help me further: (1) with details of cases; (2) interesting models, diagrams, slides, or radiographs; (3) references to the subject in the literature. The cysts can be classified as (*a*) anterior retention cysts at the angle of the nose, between the lip and the alveolus; (*b*) fissural cysts between the teeth—median or lateral or globulo-maxillary cysts; (*c*) incisive canal cysts—that is, behind the incisors; (*d*) dermoid or inclusion cysts.

Lister's Mother

Dr. J. W. CRERAR writes: Permit me to thank you for the admirable note in the *Journal* of November 13 (p. 993) on the "Isabella Harris—Ismay" ceremonial at Maryport. In the interest of historical accuracy you may perchance like to make two small corrections. Lister's mother, Isabella Harris, was born on January 29, *1792*, not 1782. I hold a certified copy of the registration of her birth, taken from the Friends' Register at Wigton. Maryport does not owe its name to Mary Queen of Scots. The name was given to an almost vacant piece of ground, known at least from the time of Queen Elizabeth as Elnesfoot or Ellenfoot, by Humphrey Senhouse, the Lord of the Manor, in compliment to his wife Mary Fleming. The name Mary Port, conferred by him in 1749, received statutory confirmation in the (2nd) Local Act of 1756.